



RFP No. W912DW-04-R-0010

**US Army Corps
of Engineers®**

Seattle District

Snoqualmie River Project Channel Widening, Snoqualmie Falls, Washington

Construction Solicitation and Specifications

January 2004

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THIS PROCUREMENT IS:

Open to both Large and Small Business

SITE VISIT:

A site visit will be scheduled in the near future and offerors will be notified via amendment as to the details.

- OFFERORS ARE URGED and expected to inspect the site where construction is to be performed and to satisfy themselves as to all general and local conditions which may affect the cost of performance of the contract, to the extent, such information is reasonably obtainable. In no event, will a failure to inspect the site constitute grounds for withdrawal of an offer after closing or for a claim after award of the contract.

BIDDING DOCUMENTS: Register for solicitations at the Internet site: <http://www.nws.usace.army.mil/ct/>

PLANHOLDER'S LISTS: Lists may also be obtained from the same site

FOR INQUIRIES, CONTACT THE FOLLOWING INDIVIDUAL(S) Monday through Friday between the hours of 8:00 a.m. and 3:30 p.m.:

ADMINISTRATIVE MATTERS:

Alex Smith (206)764-6804 FAX: (206)764-6817 j.alex.smith@usace.army.mil

TECHNICAL INQUIRIES are to be submitted via the Internet. A password is required. Bidders can obtain their password by going to (www.projnet.org), clicking on **Bidder Inquiry**, filling out the form provided, and then clicking **Continue**.

Upon receipt of your password, login to (www.projnet.org) and click on **Bidder Inquiry**. Select **NWS Seattle District**, click **Continue**. Select project, click **Continue**. Select **Bidder Inquiry** phase, click **Continue**.

Enter your question and click **Submit Inquiry**. You will receive an acknowledgement of your question via email, followed by an answer to your question after it has been processed by our technical team.

Process for Bidder Inquiries----

Bidder Inquires are technical or administrative questions from Qualified Contractors on solicitations that are advertised on the Seattle District Contracting Public Home Page.

The CORPS has developed the DrChecks Bidder Inquiries Module to simplify this process.

Since all of Seattle District Army CORPS solicitations are available to qualified Contractors on the Internet, it follows that all Contractor's technical questions concerning items within those solicitations would be submitted and answered over the Internet.

Instructions and web links are provided to Contractors on the Public Home Page and in the Solicitation. Required password are provided upon registration.

The Contractor goes to the projnet website, enters his password and submits his question. He receives an e-mail notification when his question is entered into the DrCheck data base (which is instantaneous).

Designated designers and managers also receive notification of pending questions. They enter the DrCheck data base and evaluate the pending question. One question may have a number of evaluations. These evaluations are for internal use only and are not automatically forwarded to the bidder.

A chosen arbitrator reads all evaluations, does additional research and coordination, and formulates the official response. The arbitrator closes the item and the system e-mails the official response to the Contractor.

The Contractor sees only his original question, and the official response. He does not see any other evaluations or correspondence with competing contractors.

(Mail) Seattle District Corps of Engineers, P.O. Box 3755, Seattle, WA 98124-3755
(Street) 4735 E. Marginal Way S., Seattle, WA 98134-2385

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SECTION TITLE

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& Subcontracting Plan if applicable*, Pages 00010-6 thru 00010-12

00100 Instructions, Conditions and Notice to Offerors

00110 Proposal Submission and Evaluations

00600 Representations and Certifications and other Statements of Offerors, and
Pre-Award Information

00700 Contract Clauses

00800 Special Clauses, which include the following:

 a) Special Clauses Pages 00800-1 thru 00800-14

 b) Davis-Bacon General Wage Decision No. WA030001

01000 Technical Specifications:

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RETURN THE FOLLOWING WITH YOUR OFFER:

SF1442 - Pages 00010-1 thru 00010-5 (00010-3 is reserved for use at a later time)
Subcontracting Plan if applicable*, Pages 00010-6 thru 0010-12

Section 00600 - Representations and Certifications and Pre-Award Information

20% Bid Bond

*Additionally, if a large business is the apparent low, it will be required to submit a "Small Business and Small Disadvantaged Business Subcontracting Plan," no later than 5 working days after offer closing.

** BONDS – Matter of All Seasons Construction, Inc. GAO Decision B-291166.2

Bid Bonds must be accompanied by a Power of Attorney containing an original signature from the surety, which must be affixed to the Power of Attorney after the Power of Attorney has been generated. Computer generated and signed Power's of Attorney will only be accepted if accompanied by an original certification from a current officer of the surety attesting to its authenticity and continuing validity.

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!!! CAUTION TO OFFERORS !!!

1. **PROPOSALS WILL NOT BE EVALUATED UNTIL ACQUISITION OF ALL REAL ESTATE NECESSARY FOR THE PROJECT HAS BEEN COMPLETED BY THE GOVERNMENT.**

2. **TELEPHONES:** Limited telephone service is provided in the lobby. Only two public telephones may be used by offerors for completing bids.

3. **BUSINESS HOURS:** For the Seattle District Corps of Engineers are from 7:30 A.M. to 4:00 P.M., Monday through Friday.

BEFORE SIGNING AND MAILING THIS OFFER, PLEASE TAKE NOTE OF THE FOLLOWING, AS FAILURE TO PERFORM ANY ONE OF THESE ACTIONS MAY CAUSE YOUR OFFER TO BE REJECTED

4. **AMENDMENTS:** Have you acknowledged receipt of ALL amendments? If in doubt as to the number of amendments issued, please contact the representative listed on the Information Page.

5. **AMENDED OFFER PAGES:** If any of the amendments furnished amended offer pages, the amended offer pages must be used in submitting your offer.

6. **BID GUARANTEE:** Sufficient bid guarantee in proper form must be furnished with your offer. (FOR JOBS EXCEEDING \$25,000) See section 00700, FAR 52.228-1

7. **INDIVIDUAL SURETIES:** Please note requirements for Individual Sureties in Section 00100, FAR 52.228-4003.

8. **MISTAKE IN OFFER:** Have you reviewed your offer price for possible errors in calculation or work left out?

9. **TELEGRAPHIC MODIFICATIONS:** The Seattle District does not have the capability of receiving commercial telegrams directly. Offerors who wish to modify their offer by telegram are urged to ensure that telegrams are submitted within enough time to arrive at the designated location. Any doubt as to time should be resolved in favor of EXTRA TIME. Transmission by Fax to this office is NOT ACCEPTABLE.


10. **OFFER ACCEPTANCE PERIOD:** The minimum offer acceptance period is specified in block 13D of SF1442 (page 00010-1), Solicitation, Offer and Award. Please ensure that you allow at least the stated number of calendar days for the Government to accept your offer.

11. **RFP RESULTS:** Request for Proposal offer results are not available for public dissemination; Contract award information pertaining to the award will be placed on the web; in addition, Unsuccessful Offerors will be notified of the award by letter.

12. **CENTRAL CONTRACTOR REGISTRATION:** Per DFARS Clause 252.204-7004, REQUIRED CENTRAL CONTRACTOR REGISTRATION, in Section 00700, registration is required prior to award of any contract from a Solicitation issued after May 31, 1998. No Contract Award will be made to an unregistered contractor. Internet access allows contractors to register by completing an electronic on-line registration application from CCR homepage at <http://www.ccr.gov/>. For further assistance in completing your on-line registration, contact the nearest Procurement Technical Assistance Center (PTAC) near you. A list of the nearest PTAC is located at: <http://www.rcacwv.com/ptac.htm>

13. **HUBZONE CERTIFICATION:** Per FAR Clause 52.219-4, NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999) in Section 00700. A HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration Reference: <https://el.sba.gov:90000/prodhubzone/hubzone/approval.st>.

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SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER W912DW-04-R-0010	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED January 8, 2004	PAGE OF PAGES 1
	IMPORTANT - The "offer" section on the reverse must be fully completed by the offeror.			
4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER W68MD9-3314-5414	6. PROJECT NUMBER		
7. ISSUED BY Seattle District, Corps of Engineers ATTN: CENWS-CT-CB-CU PO Box 3755 Seattle, WA 98124-3755	CODE W912DW	8. ADDRESS OFFER TO Seattle District, Corps of Engineers PO Box 3755 ATTN: CENWS-CT-CB-CU Seattle, WA 98124-3755 HAND CARRY: Seattle District Corps of Engineers Contracting Division 4735 East Marginal Way South Seattle, WA 98134-2329		
9. FOR INFORMATION CALL 	A. NAME See Information Page inside Front Cover	B. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) See Information Page inside Front Cover		

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date):

Furnish all labor, materials and equipment and perform all work for Snoqualmie River Project Channel Widening, Snoqualmie Falls, Washington in accordance with the attached Contract Clauses, Special Clauses, Technical Specifications and Drawings.

NOTE: Award will be made pursuant to the Small Business Competitive Demonstration Program

11. The Contractor shall begin performance within <u>10</u> calendar days and complete it _____ calendar days after <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See * Paragraph SC-1, 00800 .)	
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 10
13. ADDITIONAL SOLICITATION REQUIREMENTS:	
A. Sealed offers in original and <u>4</u> copies to perform the work required are due at the place specified in Item 8 <u>2:00 p.m.</u> (hour) local time <u>February 10, 2004</u> (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.	
B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required.	
C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by	
D. Offers providing less than <u>120</u> calendar days for Government acceptance after the date offers are due will not be considered and be rejected.	

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

15. TELEPHONE NUMBER (Include area code)

Fax No.:

16. REMITTANCE ADDRESS (Include only if different than Item 14)

Tax ID No:

DUNS No:

eMail:

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal or greater than the minimum requirement stated in 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS



See Page 00010-5

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGEMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN
(4 copies unless otherwise specified)

ITEM

26

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C. 2304(c) ()☐ 41 U.S.C. 253(c) ()

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE BY

USACE - Seattle District
Northwest Area Office
PO Box 92146
Tillicum, WA 98492-0146

US Army Corps of Engineers Finance Center
CEFC-AO-P
5722 Integrity Drive
Millington, TN 38054-500

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to the issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.

☐ 29. AWARD. (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN
(Type or print)

31A. NAME OF CONTRACTING OFFICER (Type or print)

SHARON GONZALEZ

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA

31C. AWARD DATE

BY

IF THE CONTRACTOR IS A CORPORATION OR PARTNERSHIP, THE **APPLICABLE PORTION** OF THE FORM LISTED BELOW MUST BE COMPLETED. IN THE ALTERNATIVE, OTHER EVIDENCE MUST BE SUBMITTED TO SUBSTANTIATE THE AUTHORITY OF THE PERSON SIGNING THE CONTRACT. IF A CORPORATION, **THE SAME OFFICER SHALL NOT EXECUTE BOTH THE CONTRACT AND THE CERTIFICATE.**

CORPORATE CERTIFICATE

I, _____, certify that I am the _____
Secretary of the Corporation named as Contractor herein; that _____, who signed this
contract on behalf of the Contractor was then _____ of said corporation; that said contract was
duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate
powers.

(Secretary) (CORPORATE SEAL)

AUTHORITY TO BIND PARTNERSHIP

This is to certify that the names, signatures and Social Security Numbers of all partners are listed below and that the person signing the contract has authority actually to bind the partnership pursuant to its partnership agreements. Each of the partners individually has full authority to enter into and execute contractual instruments on behalf of said partnership with the United States of America, except as follows: (state "none" or describe limitations, if any)

This authority shall remain in full force and effect until such time as the revocation of authority by any cause whatsoever has been furnished in writing to, and acknowledged by, the Contracting Officer.

(Names, Signatures and Social Security Numbers of all Partners)

NAME	SIGNATURE	SOCIAL SECURITY NO.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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SCHEDULE

Item No.	Description of Item	Quantity	Unit	Unit Price	Amount
0001	All Work for Channel Widening except for Items 0002, 0003, 0004 and 0005	1	JOB	L.S.	\$_____
0002	Overburden Excavation:				
0002AA	First 44,000 CY	44,000	CY	\$_____	\$_____
0002AB	Over 44,000 CY	10,000	CY	\$_____	\$_____
0003	Right Bank Rock Excavation:				
0003AA	First 7,000 CY	7,000	CY	\$_____	\$_____
0003AB	Over 7,000 CY	7,000	CY	\$_____	\$_____
0004	Extra Insurance Coverage as shown in SPECIAL CLAUSES paragraph SC-5.2	1	JOB	L.S.	\$_____
0005	Prepare As-Built Drawings as Specified in Section 01702 from Preparation to Final Approval	1	JOB	L.S.	\$ 20,000
				TOTAL	\$_____

NOTE: The dollar amount established in Item 0005 shall not be revised by bidders.

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Contracting Division

REV Sep, 2003

SUBJECT: W912DW-04-R-0010, Snoqualmie River Widening Project, Snoqualmie, Washington

NOTICE TO LARGE BUSINESS FIRMS: (RFP)

Your attention is directed to the contract clauses entitled "Utilization of Small Business Concerns (Oct 2000) (52.219-8) and "Small Business Subcontracting Plan" (Jan 2002) (52.219-9II), which are included in this solicitation. If you are a large business, and your offer is \$500,000 (\$1,000,000 for construction) or more you are required to submit a subcontracting plan **with** your proposal. Award will not be made under this solicitation without a subcontracting plan approved by the Contracting Officer.

For your information, we consider the following goals reasonable and achievable during the performance of the contract resulting from this solicitation. However, final goals will be negotiated prior to contract award. The Subcontracting Plan will then become a material part of your contract.

- a. 65% of planned subcontracting dollars can be placed with all small business concerns.
- b. 10% of planned subcontracting dollars can be placed with those small business concerns owned and controlled by socially and economically disadvantaged individuals or Historically Black Colleges and Universities or Minority Institutions. NOTE: b. is a subset of a.
- c. 5% of planned subcontracting dollars for small women-owned businesses. NOTE: c. is a subset of a. Also, the women-owned business may meet the definition of a small disadvantaged business. If so, c. will also be a subset of a. (Count firm in all applicable areas.)
- d. 5% of planned subcontracting dollars may be placed with HUBZone small business concerns. NOTE: d. is a subset of a. Note: A HUBZone firm may also SDB, women-owned and/or veteran-owned. Count firm in all applicable areas).
- e. 3% of planned subcontracting dollars for veteran-owned small business. NOTE: e. is a subset of a. Go to <http://www.va.gov/osdbu/vetctr.htm> or <http://www.sba.gov/VETS/> for questions concerning the Veterans Business Development program.
- f. 3% of planned subcontracting dollars may be placed with service-disabled veteran-owned small business. NOTE: f. is a subset of a. and e.

Goals included in any proposed plan submitted by you should be at least equal to the ones we are recommending. If lesser goals are proposed, you will have to explain how those goals and your plan represent your best efforts to comply with the policy outlined in the contract clauses. There are a number of equally important aspects of the plan. You should familiarize yourself with the requirements set forth in the contract clauses relating to the subcontracting plan before submitting a proposal.

Your plan will be reviewed and scored in accordance with AFARS Appendix D to ensure it clearly represents your firm's ability to carry out the terms and conditions set forth in the contract clauses. A Subcontracting Plan with a score of less than 70 may not be accepted. It is recommended that you use the enclosed example as a guide to assist you in developing your own subcontracting plan/program. The example is intended to assist you in developing your own subcontracting plan/program. Delete the instructions shown in parenthesis or your plan for subcontracting to small business will not be approved. If discussions during the evaluation of your subcontracting program raises doubts as to your intentions or ability to comply with FAR clause 52.219-9 it could result in your ineligibility for award.

Your plan must address how you will maximize subcontracting opportunities with the small business communities to be found within the project location. Demonstrated outreach efforts through conference attendance, use of ProNet, Corporate support of your Small Business Program Liaison Officer and Small Business Program must be addressed in your subcontracting plan.

Your Small Business Program Managers' attendance at DOD Regional Council Meetings for Small Business Education and Advocacy will be a contract requirement. **DOD Policy Guidance:** In accordance with the Small Business Act, it is the policy of the federal government to aid, assist, and counsel small business to ensure that a fair share of contracts are awarded to small business. Consistent with this, it is the policy of DOD to sponsor regional councils as one significant way to aid, assist, and counsel large business through education and advocacy *of its members who are charged with the responsibility of fulfilling this federal policy*. Therefore, be advised that the individual listed in paragraph 7 of the example will be required to attend these regional council meetings and that attendance must be addressed in your subcontracting plan. Your plan must be submitted with your price proposal.

Should you have any questions or need assistance in DEVELOPING YOUR SUBCONTRACTING PLAN please call the undersigned at (206) 764-6807. If you need TECHNICAL ASSISTANCE call Sherrye Schmahl at (206) 766-6588.

Enclosure

Sincerely,

A handwritten signature in black ink, appearing to read "Susan C. Price". The signature is fluid and cursive, with the first name "Susan" being more prominent than the last name "Price".

Susan C. Price
Deputy for Small Business

NOTE: This is an example plan. You may use this example as a guide in developing your own small business program. Delete all the instructions (parenthesis), including this message, or your plan will be returned.

SMALL BUSINESS SUBCONTRACTING PLAN

DATE:

CONTRACTOR:

ADDRESS:

PHONE NO:

PROJECT TITLE:

SOLICITATION NO:

1. In accordance with the contract clauses at 52.219-8 and 52.219-9, (name of contractor) submits the following Subcontracting Plan for Small, Small Disadvantaged, and Women-owned Business Concerns.

2. Corresponding dollar values for percentages cited in para. 3 for the base period only:

- a. Total contract amount is \$ _____.
- b. Total dollars planned to be subcontracted (to all types of businesses): \$ _____.
- c. Total dollars planned to be subcontracted to small business concerns (including 2d, 2e, 2f, 2g, and 2h below):
\$ _____.
- d. Total dollars planned to be subcontracted to small disadvantaged business concerns: \$ _____.
- e. Total dollars planned to be subcontracted to small woman-owned business concerns: \$ _____.
- f. Total dollars planned to be subcontracted to HUBZone small business: \$ _____.
- g. Total dollars planned to be subcontracted to veteran-owned small business concerns \$ _____.
- h. Total dollars planned to be subcontracted to service-disabled veteran-owned small business concerns.
\$ _____.

3. The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract awarded under the solicitation cited above.

a. Small Business Concerns (2c divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns including 3c through 3e.

b. Small Disadvantaged Business Concerns (2d divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are small disadvantaged individuals. (**NOTE: SDB firms must be certified by SBA** and meet the definition under clause 52.219-8(c)(3)).

c. Small Woman-Owned Business Concerns (2e divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are small woman-owned businesses

d. Small HUBZone Business Concerns (2f divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are HUBZone small business contractors. (SEE the definition in contract clause 52.219-8(c) or use the internet: <http://www.sba.gov/hubzone/> for further information.)

e. Veteran-owned small business concerns (2g divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are veteran-owned small business.

f. Service-disabled veteran-owned small business concerns (2h divided by 2b): _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are service-disabled veteran-owned small business.

4. The principal items or areas we will subcontract under this contract are:

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00010-8

a. Of the items or areas stated in 4; the following are planned to be subcontracted to Small Businesses (LIST THE NAME AND RESPONSIBILITY OF FIRM):

b. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Small Disadvantaged Businesses (LIST THE NAME AND RESPONSIBILITY OF FIRM):

c. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Small Women-Owned Businesses (LIST THE NAME AND RESPONSIBILITY OF FIRM):

d. Of the items or areas stated in 4.a; the following are planned to be subcontracted to HUBZone small business concerns (LIST THE NAME AND RESPONSIBILITY OF FIRM):

e. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Veteran-owned Small Business concerns (LIST THE NAME AND RESPONSIBILITY OF FIRM):

f. Of the items or areas stated in 4.a; the following are planned to be subcontracted to Service-disabled veteran-owned small business concerns (LIST THE NAME AND RESPONSIBILITY OF FIRM):

****NOTE: SEE LAST PAGE IF THIS SOLICITATION HAS OPTION YEARS OR PERIODS (DELETE THIS STATEMENT FROM YOUR PLAN)****

5. Provide a description of the method your firm used to develop the subcontracting goals in paragraph 3:

6. Indirect costs were () were not () used in establishing subcontracting goals. **If indirect costs are included in your goals, furnish a description of the method used to determine the proportionate share of indirect costs to be incurred with (i) small business concerns (ii) small disadvantaged business concerns (iii) women-owned small business concerns (iv) HUBZone small business concerns (v) Veteran-owned small business concerns and (vi) Service-disabled veteran-owned concerns **

7. The following individual will administer (name of contractor) Subcontracting Program:

(NOTE TO OFFERORS: The individual named here will be expected to perform and manage your plan and contract clause 52.219-9). Site Construction project managers may not be acceptable as your small business advocate that manages your Corporate Small Business Program).

Name: _____ Job Title: _____
Address and Telephone Number: _____

This individual's specific duties with regard to the conduct of our firm's Subcontracting Plan will include, but will not be limited to, the following:

a. Developing and maintaining bidders lists of small business, HUBZone small business, small disadvantaged business and women-owned small business concerns using sources such as the Small Business Administration's ProNet (<http://pro-net.sba.gov/>) Washington State Office of Minority and Women-owned Business Enterprises (<http://www.wsdot.wa.gov/omwbe/>) Minority Business Development Agency, US Department of Commerce, Local Minority Business Development Centers, Economic Development Centers, and National Center for American Indian Enterprise Development.

b. Assuring the inclusion of small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns.

c. Establishing and maintaining records of all solicitations and subcontract awards to ensure that the members of the firm who review bidders proposals documents their reasons for selecting or not selecting a bid submitted by a small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with instructions provided, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Attendance at DOD sponsored training programs in order to develop guidance and training to firm personnel on the policy of the federal government to aid, assist, and counsel small business under this and other government contracts.

f. Conducting or arranging for all other activities necessary to further the intent and attainment of the goals in the Plan to include motivational training of the firm's purchasing personnel, attendance at workshops, seminars and trade fairs conducted by or on behalf of small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns.

8. The following steps will be taken to ensure that small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns receive notice of and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services describe in paragraph 4 above:

a. Sources will be requested through SBA's ProNet system, business development organizations, minority and small business trade associations and at small, minority, veteran small business and women-owned small business procurement conferences; sources will be contacted; and bidding materials will be provided to all responding parties expressing an interest.

b. Internally, motivational training will be conducted to guide and encourage purchasing personnel; source lists and guides to small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns will be maintained and utilized by purchasing personnel while soliciting subcontracts and purchase orders; activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare their proposals and to evaluate continuing compliance with the Subcontracting Plan.

9. [Name of contractor] agrees that the clause entitled "Utilization of Small Business Concerns" (Oct 2000) will be included in all subcontracts that offer further subcontracting opportunities. All subcontractors, except small business concerns, who receive subcontracts in excess of \$500,000 (\$1,000,000 in the case of construction) will be required to adopt a subcontracting plan that complies with the requirements of this clause. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied.

10. (Name of contractor) agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the Contracting agency or Small Business Administration in order to determine the extent of compliance by the offeror with the subcontracting plan and with the clause entitled "Utilization of Small Business Concerns" contained in the contract.

11. (Name of Contractor) agrees to maintain at least the following types of records to document compliance with the Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns,

veteran-owned small business concerns and service-disabled veteran-owned small business concerns along with records of attendance at conferences, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns.

c. Records on all subcontract solicitations resulting in an award of more than \$100,000 on a contract-by-contract basis, indicating (1) whether small business concerns were solicited, and if not, why not; (2) whether veteran-owned small business concerns were solicited, and if not, why not; (3) whether service-disabled veteran-owned small business concerns were solicited, and if not, why not; (4) whether HUBZone small business were solicited, and if not, why not; (5) whether small disadvantaged business concerns were solicited, and if not, why not; and (6) whether small women-owned business concerns were solicited, and if not, why not; and (7) reasons for the failure of solicited small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBzone small business concerns, small disadvantaged business concerns, and women-owned small business concerns to receive a subcontract award.

d. Records of all subcontract award data to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

12. (Name of Contractor) will submit a SF 295, Summary Subcontract Report, on Corps of Engineers projects only. The SF 295 shall be completed and distributed in accordance with the Corps of Engineers Supplemental Instructions. (Name of Contractor) will not report Corps of Engineers projects through any other Agency unless authorized by the Contracting Officer.

13. In closing, (Name of contractor) states that it will be the policy of (Name of contractor) to afford every practicable opportunity for small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns to participate in contracts awarded to (Name of contractor) by the Federal Government, to ensure that equitable opportunity is provided small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns to compete for award of subcontracts and purchase orders, and to diligently pursue the achievement of our goals of participation by small business concerns, small disadvantaged business concerns, women-owned small business concerns, HUBZone small business concerns, veteran-owned small business concerns and service-disabled veteran-owned small business concerns in the dollars available for subcontract/purchase order awards under this contract.

BY: _____

Signature and Title of CEO
Company Name

DATE: _____

NOTE: If this solicitation has options (or option periods) , the plan must contain separate goals for *each* option or option period (year). EXAMPLE:

	<u>Dollars</u>	<u>Percentage</u>
1. Optional Yr _____ total:	\$ _____	_____
2. Total to be subcontracted to all types of businesses:	\$ _____	_____
a. Subcontracted to Small Business (including b, c, d, e, and f below):	\$ _____	_____
b. Subcontracted to Small Disadvantaged Businesses:	\$ _____	_____
c. Subcontracted to Women-Owned Small Businesses:	\$ _____	_____
d. Subcontracted to HUBzone concerns	\$ _____	_____
e. Subcontracted to Veteran-owned Small Business:	\$ _____	_____
f. Subcontracted to Service-disabled Small Business	\$ _____	_____
1. Optional Yr _____ total:	\$ _____	_____
2. Total to be subcontracted to all types of businesses:	\$ _____	_____
a. Subcontracted to Small Business (including b, c, d, e, and f below):	\$ _____	_____
b. Subcontracted to Small Disadvantaged Businesses:	\$ _____	_____
c. Subcontracted to Women-Owned Small Businesses:	\$ _____	_____
d. Subcontracted to HUBzone concerns	\$ _____	_____
e. Subcontracted to Veteran-owned Small Business:	\$ _____	_____
f. Subcontracted to Service-disabled Small Business	\$ _____	_____

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Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (OCT 2003)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS+4" followed by the DUNS number or "DUNS+4" that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet, Inc. The DUNS+4 is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the offeror to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11) for the same parent concern.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business name.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company physical street address, city, state and Zip Code.

(iv) Company mailing address, city, state and Zip Code (if separate from physical).

(v) Company telephone number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(End of provision)

52.213-3 NOTICE TO SUPPLIER (APR 1984)

This is a firm order ONLY if your price does not exceed the maximum line item or total price in the Schedule. Submit invoices to the Contracting Officer. If you cannot perform in exact accordance with this order, WITHHOLD

PERFORMANCE and notify the Contracting Officer immediately, giving your quotation.

(End of clause)

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) Definitions. As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing or written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in

evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

- (i) The overall evaluated cost or price and technical rating of the successful offeror;
- (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
- (iii) A summary of the rationale for award; and
- (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm fix price contract resulting from this solicitation.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be **20%** _ percent of the bid price or \$3,000,000, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured

financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____ (for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ _____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$ _____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States
\$ _____. This draft is drawn under Irrevocable Letter of Credit No.

_____.

[Beneficiary Agency]

By: _____

(End of clause)

52.233-2 SERVICE OF PROTEST (AUG 1996)

- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Contracting Office
Seattle District
US Army corps of Engineers
PO Box 3755
Seattle WA 98124

- (b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

- (a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

- (b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

MAGNITUDE OF CONSTRUCTION (FAR 36.204) (52. 236-4902) DEC 1999

(a) Amount of Construction for this solicitation is in the range of **\$1,000,000.00** to **\$5,000,000.00**.

52.252-3 ALTERATIONS IN SOLICITATION (APR 1984)

Portions of this solicitation are altered as follows:

Filled in at time of award.

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999)

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter “CAGE” before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--

(1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;

(2) Complete section A and forward the form to DLIS; and

(3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION ALTERNATE A (NOV 2003)

(a) Definitions. As used in this clause--

“Central Contractor Registration (CCR) database” means the primary Government repository for contractor information required for the conduct of business with the Government.

“Commercial and Government Entity (CAGE) code” means--

(1) A code assigned by the Defense Logistics Information Service (DLIS) to identify a commercial or Government entity; or

(2) A code assigned by a member of the North Atlantic Treaty Organization that DLIS records and maintains in the CAGE master file. This type of code is known as an “NCAGE code.”

“Data Universal Numbering System (DUNS) number” means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

“Data Universal Numbering System +4 (DUNS+4) number” means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11 of the Federal Acquisition Regulation) for the same parent concern.

“Registered in the CCR database” means that--

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database;

(2) The Contractor's CAGE code is in the CCR database; and

(3) The Government has validated all mandatory data fields and has marked the records “Active.”

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “DUNS” or “DUNS +4” followed by the DUNS or DUNS +4 number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company Physical Street Address, City, State, and Zip Code.

(iv) Company Mailing Address, City, State and Zip Code (if separate from physical).

(v) Company Telephone Number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(g)(1)(i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in Subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of Subpart 42.12 of the FAR; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (g)(1)(i) of this clause, or fails to perform the agreement at paragraph (g)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.

(h) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423, or 269-961-5757.

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SECTION 00110

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SECTION 00110
PROPOSAL SUBMISSION AND EVALUATION

1. INTRODUCTION.

1.1. Your firm is invited to submit a proposal in response to Request for Proposal No. W912DW-04-R-0010 entitled '**Snoqualmie River Project – Channel Widening, Snoqualmie Falls, King County, Washington,**'. Prospective offerors are required to prepare and submit proposals that will be evaluated in accordance with this section of the solicitation. In accordance with Federal Acquisition Regulations (FAR), Part 15.101-2, proposals will be evaluated using the lowest price technically acceptable source selection process. The evaluation process will be to first determine those proposals that are technically acceptable and then from those proposals determine which firm is the lowest price. The firm offering the **lowest price technically acceptable offer will be awarded the contract.**

1.2. It is the intent of the Government to make award based upon initial offers, without further discussions or additional information. Therefore, proposals should be submitted initially on the most favorable terms from a price and technical standpoint. Do not assume you will have the opportunity to clarify, discuss or revise your proposal.

1.5. Project Description The Seattle District US Army corps of Engineers has a requirement to widen the channel at eh Snoqualmie River Project, Snoqualmie Falls, Washington. The project consists of demolition of a small above water line concrete wall, construction on new concrete retaining wall, channel excavation, blasting of rock (partially in the water), new stone channel protection, earthwork, and road location.

2. EVALUATION FACTORS.

2.1. Technical Evaluation Factors.

2.1.1. The technical evaluation factors identified below will be evaluated on an ACCEPTABLE/NON-ACCEPTABLE basis only:

2.1.1.1. Relevant Experience of Firms Proposed

2.1.1.2. Qualifications of Proposed Key Team Members

2.1.1.3. Past Performance, Customer Satisfaction, Timely performance

2.1.1.4 Past Performance in Implementing subcontracting Plans

2.2. Basis of the source selection evaluation - This Section establishes the method to be implemented with regard to the evaluation of the proposals. Evaluation is to be based exclusively on the merits and contents of the proposal and any subsequent discussions required. Offerors not meeting the minimum requirements of *all* technical evaluation factors shall be determined to be **NON-ACCEPTABLE** and will not be considered for award. Technical Proposals will be evaluated on an **ACCEPTABLE** or

NON-ACCEPTABLE basis only. Proposals must set forth full, accurate, and complete information as required by this RFP. Absence of information will be deemed as if no support for that factor was provided. Award will be made to the lowest price technically acceptable offeror.

2.2.1. Technical Evaluation Ratings - Definitions

2.2.1.1. Acceptable: An acceptable rating indicates that the offeror has provided sufficient information to meet the **minimum** qualifications/standards described in the technical evaluation factor.

2.2.1.2. Non-Acceptable: A non-acceptable rating indicates that the offeror has not provided sufficient information to meet the **minimum** qualifications/standards described in the technical evaluation factor.

3. GENERAL SUBMITTAL REQUIREMENTS.

3.1. Proposals shall be submitted in two parts: (a) technical proposal, and (b) price proposal. Each shall be submitted in a separate envelope or package with the type of proposal (i.e., technical or price) clearly printed on the outside of the envelope or package. The maximum number of pages in the technical proposal should not exceed 60 one-sided pages with a font size no smaller than 10 point. Offerors submitting proposals should limit submission to data essential for evaluation of proposals so that a minimum of time and moneys are expended in preparing information required by the RFP. Proposals are to be on 8 ½ x 11-inch paper, to the maximum extent practicable, and submitted in standard letter (8½ x 11-inch) hardback loose-leaf binders. Contents of binders shall be tabbed and labeled to afford easy identification from the proposal Table of Contents. No material shall be incorporated by reference or reiteration of the RFP. Any such material will not be considered for evaluation. It shall be presented in a manner, which allows it to "STAND ALONE" without need for evaluators to reference other documents. Table of Contents, Index Tabs, and Photographs **will not** be considered a page. Unnecessarily elaborate brochures or other presentation materials beyond those sufficient to present complete and effective responses are not desired and may be construed as an indication of the Offerors lack of cost consciousness. Penalty for making false statements in proposals is prescribed in 18 U.S.C. 1001.

4. MINIMUM SUBMITTAL REQUIREMENTS

4.1. Relevant Experience of the firms proposed for the team with similar projects: The Offeror shall submit projects demonstrating relevant experience, using the format given below. "Relevant experience" is defined as work involving submerged rock and unclassified excavation near existing facilities, structures and public areas, which is similar in scope, cost and complexity to the project in this solicitation. Provide a list of at least five specific projects that were

completed within the last ten years, starting with the most recent and relevant projects and work backwards in time. The projects selected should clearly demonstrate the capabilities of the Offeror in one or more of the areas listed in paragraph 1.1. Each of the areas listed in paragraph 1.1 must be demonstrated in at least three (3) of the projects selected.

4.1.1 Examples of Relevant Experience: Examples of relevant experience of the firm are projects including:

- a) Submerged rock excavation;
- b) Submerged unclassified excavation;
- c) Blasting within 100' of existing facilities, structures and public areas;
- d) Blasting activity controlled for protection of aquatic species;
- e) Surface rock excavation and blasting projects in close proximity to public areas where site access, maintaining good public relations, and control of flyrock, and other blasting impacts were critical to project completion and public safety.

At a minimum, for each project listed, provide:

- 1) Project title and location
- 2) Dollar value of construction
- 3) Construction period (month/year start to month/year end)
- 4) Description of the project scope of work
- 5) Brief description of how the project is relevant, and meets the requirements of this RFP project.
- 6) Current primary point of contact for the customer (name, relationship to project, agency/firm, city and state, phone number).

4.2. Qualification of proposed key team members : Provide qualifications, in the resume format given in paragraph 2.6 below, for the KEY individual team members proposed this project. The Key team members are those listed below. In addition, the Offeror must provide a concise summary of the duties and responsibilities for each of the proposed individuals that clearly indicates separate duties and responsibilities for each of the positions. The proposal must clearly present the separate credentials for each position and each person performing the duties of the position to which they are identified. Resumes must include a minimum of three (3) examples of project experience and educational qualifications, where applicable. It is expected that the key individuals in your proposal will be the individuals who perform work under the contract. The Contracting Officer must approve substituted personnel. Resumes should be no more than two pages per individual and submitted in a format similar to the one shown below. At a minimum, resumes must be provided for the following individuals:

4.2.1 Blaster-In-Charge : The Blaster-In-Charge shall have a current Washington State Blasting license and any other certifications needed to practice in the State of Washington, have a minimum of 10 years experience as a blaster-in-charge, with five (5) successful projects that involved in-water blasting, and five (5) successful projects that involved blasting near structures that require seismic monitoring and protection (can be same as in-water projects).

4.2.2 Contractor Quality Control (CQC) System Manager: The CQC (Contractor Quality Control) System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years construction experience on construction similar to this contract or a construction person with a minimum of ten (10) years in related work. Experience must have occurred within the past ten (10) years.

4.2.3 Project On-site Superintendent: The Project Superintendent shall have no less than five (5) years experience as a project superintendent on construction projects of similar scope, size and complexity. The experience must demonstrate construction knowledge and ability to manage construction, including excavation within and adjacent to waters of the state, and be consistent with the type of construction provided for in this solicitation. The Project On-site Superintendent shall have completed at least three surface rock excavation and blasting projects in close proximity to public areas where site access, maintaining good public relations, and control of flyrock, and other blasting impacts were critical to project completion and public safety.

4.2.4 Project Manager: The Project Manager shall be a construction person with a minimum of ten (10) years managing projects of the same scope, size and complexity as this solicitation. Experience must have occurred within the past ten (10) years. The Project Manager shall have completed at least three surface rock excavation and blasting projects in close proximity to public areas where site access, maintaining good public relations, and control of flyrock, and other blasting impacts were critical to project completion and public safety.

4.2.5 Project Blasting Consultant: The Project Blasting Consultant shall have at least 10 years experience in blast design and the control of blast-induced effects including vibration, air-overpressure, flyrock, and underwater blasting impacts for similar construction projects. This experience shall include experience in the maintenance of good public relations with respect to blasting and rock excavation projects in close vicinity to adjacent public and private property. The blasting consultant must not be an employee of the contractor, subcontractors or any suppliers for the project, nor have any direct business affiliation, or conflicts of interest, corporate or otherwise, with the contractor, subcontractors or any suppliers for the project.

2.6 Resume Format:

Name and Title

- 1. Proposed Duties/functions for this project*
- 2. Firm affiliation and years affiliated*
- 3. Years of experience performing duties/functions as proposed for this project.*
- 4. Education – school attended, degree, certification, year, and specialization*
- 5. List active registrations (professional or technical licenses/certifications)*
- 6. Describe specific qualifications for this project*
- 7. List projects worked on to include:*
 - Project title and location,*
 - Scope, size and complexity,*
 - Duties/functions,*
 - Date of project*
- 8. Demonstrate how each project submitted is relevant to the project to be constructed under this solicitation.*

4.3. Past Performance of the Prime : Past performance information should be provided for projects identified under Tab 1, **“Relevant Experience of the firms proposed for the team with similar projects”**. Past performance of the prime contractor will be evaluated using the CCASS database. All performance ratings for the past 7 years shall be considered. If an Offeror does not have past performance available in CCASS or wishes to augment the CCASS system ratings, the Offerors may ask customers to submit the Customer Satisfaction Survey found at the end of this section. For each project constructed for Private Industry, provide a completed Customer Satisfaction Survey for each applicable project constructed within the last seven (7) years. All Customer Satisfaction Surveys must be submitted to the Government from the customer or agency that is providing the information. Further instructions are found at the top of the Customer Satisfaction Survey. Only relevant projects should be included. A relevant project is one of the same scope, cost and complexity as this solicitation. Offerors wanting to review the CCASS ratings contained in the Corps of Engineers CCASS Database may request the information by fax on company letterhead at the following telephone-fax number: (503) 808-4596. The Government reserves the right to contact the evaluator on previous Government or Private Sector work to verify the Offeror’s construction experience. In the case of an Offeror without a record of past performance or for whom information on past performance is not available, the offeror **may not be evaluated as favorable or unfavorable** on past performance (see FAR 15.305(a)(2)(iv)). An overall rating of satisfactory or above on CCASS performance evaluations and an overall acceptable rating on Customer Satisfaction Surveys will be given an acceptable rating.

4.3.1 Offeror submitted surveys. Surveys submitted directly by the Offeror will not be considered. Please ensure envelopes containing surveys being submitted to this office do not contain the Offeror’s return address.

4.3.2 Customer Satisfaction Surveys. At a minimum, no more than three (3) customer satisfaction surveys will be considered for the prime firm (i.e., the firm signing the Standard Form 1442, Solicitation, Offer and Award) for work not listed (i.e., civilian projects) in the Government CCASS system.

4.4 Past Performance in Implementing Subcontracting Plans

4.4.1. No submittal required for this criterion The Government will utilize performance evaluations contained in the Construction Contract Administration Support System (CCASS) to evaluate this criterion.

4.4.2. Evaluation Method. Firms will be evaluated based on the ratings received for item 16i, "Implementation of Subcontracting Plan" for performance evaluations retrieved from the CCASS system. Firms without any evaluations in the CCASS system, or for which this item is not evaluated (N/A) will receive a neutral (Satisfactory) rating. Firms that are rated Satisfactory or higher for this item in CCASS report(s) will receive a rating of Acceptable. Firms that receive a rating below Satisfactory for this item in one or more CCASS reports will receive a rating of Non Acceptable for this criterion.

5. PROPOSAL CONTENTS/FORMAT.

5.1. Technical Proposal Format. As a minimum, each copy of the technical proposal should contain the information and follow the general format specified below. Pages should be numbered from beginning to end, without repeating for new sections.

5.2. Technical Proposal Format- Five (5) sets required, **original plus four (4) copies**

TECHNICAL PROPOSAL FORMAT

1. Technical Proposal Cover Letter, to include:

a. Solicitation Number

b. Name, address, and telephone and facsimile numbers of the Offeror (and electronic address, if available)

c. A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item and that the offer has an acceptance period of 120 calendar days from the date the proposal is submitted.

d. Name, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the Offerors behalf with the Government in connection with this solicitation

e. Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

f. Table of Contents. List all sections for the technical proposal. Any future amendments, additions and/or revisions to proposal shall include updated Table of Contents for each set.

5.3. Price Proposal Format. The price proposal shall be submitted in an **ORIGINAL plus 1 copy** and must be signed by an official authorized to bind your firm. Note that Standard Form 1442, Block 13D, provides the number of calendar days after the date of the offer for which the proposal is firm. The price proposal, to be submitted at the same time as the technical proposal, should include:

5.4 Price Proposal - Original and one (1) copy

\$F 1442, Solicitation, Offer and Award and Award and Corporate certificate

Acknowledge all amendments by number and date in Block 19 on SF 1442

BACK

Pricing Schedule

Section 00600, Representation, Certifications and Other Statements of Offerors

. If proposal exceeds \$1,000,000, offeror shall include subcontracting Plan

5.5. Additional Instructions.

5.5.1. Provide the name, point of contact, phone number, and address for the bank and bonding company of the firm signing the SF 1442.

5.5.2. Bid Bonds - Bid Bonds must be accompanied by a Power of Attorney containing an original signature from the surety, which must be affixed to the Power of Attorney after the Power of Attorney has been generated. Computer generated and signed Power's of Attorney will only be accepted if accompanied by an original certification from a current officer of the surety attesting to its authenticity and continuing validity.

6. PROPOSAL EVALUATIONS AND AWARD. A firm fixed-price contract will be awarded to one firm submitting the proposal that:

6.1. Conforms to this request for proposals (RFP),

6.2. Is the technically acceptable, lowest price offer, and

6.3. Is determined to be in the best interest of the Government.

6.4. To be considered for award, proposals shall conform to the terms and conditions contained in the RFP. No proposal shall be accepted that does not address all factors specified in this solicitation or which includes stipulations or qualifying conditions.

6.5. Price. Price will be evaluated for reasonableness and to assess the offerors understanding of the contract requirements and any risk inherent in the offerors approach. Financial capacity and bonding ability will be checked.

6.6. Award. It is the intent of the Government to make award based upon the lowest price technically acceptable initial offer, without further discussions or additional information. Therefore, proposals shall be submitted initially on the most favorable terms from a price and technical standpoint. Do not assume you will be afforded the opportunity to clarify, discuss or revise your proposal. If award is not made on initial offers, discussion will be conducted as described below.

6.7. Competitive Range. (FAR 15.306(c))

6.7.1. Competitive Range. After initial evaluation of proposals, if the Contracting Officer determines that discussions are required, the Contracting Officer will establish a competitive range comprised of the technically acceptable proposals. Discussions will be held with firms in the competitive range.

6.7.2. Discussions . Should it be necessary for discussions, the Government will conduct written discussions with only those offerors determined to be technically acceptable. If all proposals are determined to be non-acceptable, at the Contracting Officer's discretion, all firms may be requested to participate in discussions. As a result of discussions, offerors may make revisions to their initial offers. Discussions will culminate in a request for Final Proposal Revision, the date and time of which will be common to all offerors.

7. DEBRIEFINGS

7.1. Pre-award. Offerors excluded from the competition before award will receive a notice and may request a debriefing before award by submitting a written request for a debriefing to the Contracting Officer within three (3) days after receipt of the notice of exclusion from the competition.

7.2. Post-award. Unsuccessful Offerors shall request post-award debriefing within three (3) days after the date on which the offeror received notification of contract award. Point-by-point comparisons with other offerors proposals will not be made, and debriefings will not reveal any information that is not releasable under the Freedom of Information Act.

8. PROPOSAL EXPENSES AND PRECONTRACT COSTS PROPOSAL EXPENSES AND PRECONTRACT COSTS: This RFP does not commit the Government to pay costs incurred in preparation and submission of the initial and any subsequent proposals or any other costs incurred prior to execution of a formal contract.

SEE CUSTOMER SATISFACTION SURVEY FOLLOWING THIS PAGE

END OF SECTION 00110

CUSTOMER SATISFACTION SURVEY
W912DW-04-R-0010 "Snoqualmie River Project – Channel Widening, Snoqualmie Falls, King County, Washington Seattle District, Corps of Engineers

SECTION 1 -- TO BE COMPLETED BY THE OFFEROR AND PROVIDED TO THE CUSTOMER REFERENCE

Name of Firm Being Evaluated: _____

Project Title & Location: _____

Project Dollar Value : _____

Year Completed: _____ Project Manager: _____

SECTION 2 -- TO BE COMPLETED BY THE CUSTOMER REFERENCE AND MAILED, HAND-DELIVERED, E-MAILED OR FAXED DIRECTLY TO: Forms submitted by other than the customer (i.e., by the offeror), will not be considered.

U.S. Army Corps of Engineers, Seattle District
 Attn: CENWS-CT-CB-CU (J Alex Smith)
 P.O. Box 3755
 Seattle, WA 98124-3755

FAX: (206) 764-6817
Street Address:
 4735 E. Marginal Way S.
 Seattle WA 98134-2385
 E- Mail j.alex.smith@usace.army.mil

OVERVIEW: The firm shown above has submitted a proposal on a Seattle District Corps of Engineers project and provided your name as a customer reference. Part of our evaluation process requires information on the firm's past performance. Your input is important to us and responses are required by **Bid Closing Date** for inclusion in our evaluation. Your assistance is greatly appreciated.

In the blocks below, please indicate your overall level of satisfaction with the work performed by the firm shown in Section 1. Mark *Not Applicable* (N/A) for any areas that do not apply. Please include comments on page 2 of this form.

	On this project, the firm:	Satisfaction					
		Low			High		
1.	Completed Your Major Project Milestones on Time	1	2	3	4	5	N/ A
2.	Delivered Quality Construction	1	2	3	4	5	N/ A
3.	Demonstrated a Willingness to Cooperate						
4.	Demonstrated Problem Solving Skills	1	2	3	4	5	N/ A

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(b) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN: _____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other _____

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it () is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that-

(i) The Offeror and/or any of its Principals -

(A) Are () are not () presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have () have not (), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has () has not (), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is \$28.5 million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

- (a) This provision applies to small business concerns only.
- (b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

- (a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.
- (b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--
 - (i) Offers from HUBZone small business concerns that have not waived the evaluation preference;
 - (ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-19 SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000)

(a) Definition.

"Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) [Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.] The Offeror [] is, [] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees Avg. Annual Gross Revenues

<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51 - 100	<input type="checkbox"/> \$1,000,001 - \$2 million
<input type="checkbox"/> 101 - 250	<input type="checkbox"/> \$2,000,001 - \$3.5 million
<input type="checkbox"/> 251 - 500	<input type="checkbox"/> \$3,500,001 - \$5 million
<input type="checkbox"/> 501 - 750	<input type="checkbox"/> \$5,000,001 - \$10 million
<input type="checkbox"/> 751 - 1,000	<input type="checkbox"/> \$10,000,001 - \$17 million
<input type="checkbox"/> Over 1,000	<input type="checkbox"/> Over \$17 million

(End of provision)

52.219-21 SMALL BUSINESS SIZE REPRESENTATION FOR TARGETED INDUSTRY CATEGORIES UNDER THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (MAY 1999)

(Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees Avg. Annual Gross Revenues

<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51 - 100	<input type="checkbox"/> \$1,000,001 - \$2 million
<input type="checkbox"/> 101 - 250	<input type="checkbox"/> \$2,000,001 - \$3.5 million
<input type="checkbox"/> 251 - 500	<input type="checkbox"/> \$3,500,001 - \$5 million

___ 501 - 750 ___ \$5,000,001 - \$10 million

___ 751 - 1,000 ___ \$10,000,001 - \$17 million

___ Over 1,000 ___ Over \$17 million

(End of provision)

52.219-25 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM—DISADVANTAGED STATUS AND REPORTING (OCT 1999)

(a) Disadvantaged status for joint venture partners, team members, and subcontractors. This clause addresses disadvantaged status for joint venture partners, teaming arrangement members, and subcontractors and is applicable if this contract contains small disadvantaged business (SDB) participation targets. The Contractor shall obtain representations of small disadvantaged status from joint venture partners, teaming arrangement members, and subcontractors through use of a provision substantially the same as paragraph (b)(1)(i) of the provision at FAR 52.219-22, Small Disadvantaged Business Status. The Contractor shall confirm that a joint venture partner, team member, or subcontractor representing itself as a small disadvantaged business concern, is identified as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net) or by contacting the SBA's Office of Small Disadvantaged Business Certification and Eligibility.

(b) Reporting requirement. If this contract contains SDB participation targets, the Contractor shall report on the participation of SDB concerns at contract completion, or as otherwise provided in this contract. Reporting may be on Optional Form 312, Small Disadvantaged Business Participation Report, or in the Contractor's own format providing the same information. This report is required for each contract containing SDB participation targets. If this contract contains an individual Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, reports may be submitted with the final Subcontracting Report for Individual Contracts (Standard Form 294) at the completion of the contract.

(End of clause)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) () It has, () has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) () It has, () has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-25 AFFIRMATIVE ACTION COMPLIANCE (APR 1984)

The offeror represents that

(a) ☐ it has developed and has on file, ☐ has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or

(b) ☐ has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(End of provision)

52.223-4 RECOVERED MATERIAL CERTIFICATION (OCT 1997)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.

(End of provision)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of

a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclosure such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

- (1) Identification of each government holding a significant interest; and
- (2) A description of the significant interest held by each government.

(End of provision)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

(a) Definitions. As used in this provision--

- (1) Foreign person means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.
- (2) United States person is defined in 50 U.S.C. App. 2415(2) and means--
 - (i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);
 - (ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and
 - (iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) Certification. If the offeror is a foreign person, the offeror certifies, by submission of an offer, that it--

- (1) Does not comply with the Secondary Arab Boycott of Israel; and
- (2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. 2407(a) prohibits a United States person from taking.

(End of provision)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.
- (6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.
- (i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.
- (ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.
- (7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.
- (b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.
- (2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--
- (i) This contract is a construction contract; or
- (ii) The supplies being transported are--
- (A) Noncommercial items; or
- (B) Commercial items that--
- (1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);
- (2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or
- (3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.
- (c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --
- (1) U.S.-flag vessels are not available for timely shipment;
- (2) The freight charges are inordinately excessive or unreasonable; or
- (3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
_____	_____	_____
_____	_____	_____
_____	_____	_____
TOTAL	_____	_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)

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SUBMIT THE FOLLOWING INFORMATION WITH YOUR OFFER
NOTICE TO OFFERORS REGARDING PRE-AWARD INFORMATION

It is requested that the following information be provided with your bid:

1. Company Name and Address: _____

2. Point of Contact:

Name: _____ Phone: (____) _____

Alt Phone: (____) _____ Fax: (____) _____
3. Electronic Transfer Payments will now be required for all new contracts. Do you currently receive Electronic Transfer Payments from this agency? (agency codes 00005524/00006482)

Yes() NO()
4. Name of Bank and Branch _____

Personal Banker _____

Telephone Number _____

Fax Number _____
5. Name of Bonding Agent Company _____

Agents Name _____

Telephone _____
6. List three projects that are substantially complete or have been completed within the last two years that are similar to this project. Projects should be listed in the following order: Federal Projects, state projects, city and county projects, than commercial projects. Please provide in the following format:
 - a) Title & Location of Project _____

Agency/Company _____

Award Amount _____

Point of Contact (Name & Title) _____

Telephone Number _____
Year of Completion _____

b) Title & Location of Project _____
Agency/Company _____
Award Amount _____
Point of Contact (Name & Title) _____
Telephone Number _____
Year of Completion _____

c) Title & Location of Project _____
Agency/Company _____
Award Amount _____
Point of Contact (Name & Title) _____
Telephone Number _____
Year of Completion _____

7) List all outstanding uncompleted projects, in the following format:

a) Title of Project _____
Agency/Company _____
Est. Completion Date _____
Award Amount _____

b) Title of Project _____
Agency/Company _____
Est. Completion Date _____
Award Amount _____

c) Title of Project _____
Agency/Company _____
Est. Completion Date _____
Award Amount _____

END OF SECTION 00600

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (DEC 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Commercial item means--

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that--

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for--

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if--

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services--

- (i) Catalog price means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and
 - (ii) Market prices means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.
 - (7) Any item, combination of items, or service referred to in subparagraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or
 - (8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.
 - (d) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).
 - (e) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.
 - (f) Nondevelopmental item means--
 - (1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;
 - (2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or
 - (3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.
 - (g) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.
 - (h) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.
- (End of clause)

52.203-3 GRATUITIES (APR 1984)

- (a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--
 - (1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and
 - (2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable

treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding

any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 2003)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

State, as used in this clause, means a State of the United States, the District of Columbia, or an outlying area of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

- (ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
 - (iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- (3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.
- (4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.
- (d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.
- (e) Penalties.
- (1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.
- (2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.
- (f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.
- (End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

- (1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or
- (2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not
- (3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.204-7 CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(a) Definitions. As used in this clause--

Central Contractor Registration (CCR) database means the primary Government repository for Contractor information required for the conduct of business with the Government.

Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see the FAR at Subpart 32.11) for the same parent concern.

Registered in the CCR database means that--

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database; and

(2) The Government has validated all mandatory data fields and has marked the record "Active".

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company Physical Street Address, City, State, and Zip Code.

(iv) Company Mailing Address, City, State and Zip Code (if separate from physical).

(v) Company Telephone Number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR

database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(g)(1)(i) If a Contractor has legally changed its business name, “doing business as” name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in Subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of Subpart 42.12 of the FAR; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (g)(1)(i) of this clause, or fails to perform the agreement at paragraph (g)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the “Suspension of Payment” paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the “Suspension of payment” paragraph of the EFT clause of this contract.

(h) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423, or 269-961-5757.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the contract, subcontract, or modification; or
- (4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to

this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

52.215-8 ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (OCT 1997)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order:

(a) The Schedule (excluding the specifications).

(b) Representations and other instructions.

(c) Contract clauses.

(d) Other documents, exhibits, and attachments.

(e) The specifications.

(End of clause)

52.215-10 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA (OCT 1997)

(a) If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because--

(1) The Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) A subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) Any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction.

(b) Any reduction in the contract price under paragraph (a) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(c)(1) If the Contracting Officer determines under paragraph (a) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (c)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(d) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

(b) If any price, including profit or fee, negotiated in connection with any modification under this clause, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

(c) Any reduction in the contract price under paragraph (b) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d)(1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-12 SUBCONTRACTOR COST OR PRICING DATA (OCT 1997)

(a) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at

FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(b) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(c) In each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4, when entered into, the Contractor shall insert either--

(1) The substance of this clause, including this paragraph (c), if paragraph (a) of this clause requires submission of cost or pricing data for the subcontract; or

(2) The substance of the clause at FAR 52.215-13, Subcontractor Cost or Pricing Data--Modifications.

52.215-13 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall--

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned

small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002)--ALTERNATE II (OCT 2001).

(a) This clause does not apply to small business concerns.

(b) Definitions. As used in this clause--

Commercial item means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

Commercial plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

Individual contract plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

Master plan means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

Subcontract means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) Proposals submitted in response to this solicitation shall include a subcontracting plan that separately addresses subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate a subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract

performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to HUBZone small business concerns;

(v) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vi) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to--

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, HUBZone small business, small disadvantaged business and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled "Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will--

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated)

(i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating--

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether HUBZone small business concerns were solicited and, if not, why not;

(D) Whether small disadvantaged business concerns were solicited and, if not, why not;

(E) Whether women-owned small business concerns were solicited and, if not, why not; and

(F) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact--

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through--

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owner small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided--

(1) the master plan has been approved, (2) the offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer, and (3)

goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization Of Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) Standard Form 294, Subcontracting Report for Individual Contracts. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) Standard Form 295, Summary Subcontract Report. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion or, in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to

demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by the commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

(End of clause)

52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer.

(End of clause)

52.222-3 CONVICT LABOR (JUN 2003)

(a) Except as provided in paragraph (b) of this clause, the Contractor shall not employ in the performance of this contract any person undergoing a sentence of imprisonment imposed by any court of a State, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.

(b) The Contractor is not prohibited from employing persons--

(1) On parole or probation to work at paid employment during the term of their sentence;

(2) Who have been pardoned or who have served their terms; or

(3) Confined for violation of the laws of any of the States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(i) The worker is paid or is in an approved work training program on a voluntary basis;

(ii) Representatives of local union central bodies or similar labor union organizations have been consulted;

(iii) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services;

(iv) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(v) The Attorney General of the United States has certified that the work-release laws or **regulations** of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (SEP 2000)

(a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(c) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis -Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis -Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis -Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis -Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis -Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the

information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be

paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis -Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(i) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis -Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis -Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(d) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
7.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is
[Contracting Officer shall insert description of the geographical areas where the contract is to be performed,
giving the State, county, and city].

(End of provision)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or

origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the

Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least

as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

52.222-29 NOTIFICATION OF VISA DENIAL (JIUN 2003)

It is a violation of Executive Order 11246 for a Contractor to refuse to employ any applicant or not to assign any person hired in the United States, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, or Wake Island, on the basis that the individual's race, color, religion, sex, or national origin is not compatible with the policies of the country where or for whom the work will be performed (41 CFR 60-1.10). The Contractor shall notify the U.S. Department of State, Assistant Secretary, Bureau of Political-Military Affairs (PM), 2201 C Street NW., Room 6212, Washington, DC 20520, and the U.S. Department of Labor, Deputy Assistant Secretary for Federal Contract Compliance, when it has knowledge of any employee or potential employee being denied an entry visa to a country where this contract will be performed, and it believes the denial is attributable to the race, color, religion, sex, or national origin of the employee or potential employee.

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Definitions. As used in this clause--

All employment openings means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

Executive and top management means any employee--

- (1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;
- (2) Who customarily and regularly directs the work of two or more other employees;
- (3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;
- (4) Who customarily and regularly exercises discretionary powers; and
- (5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

- (1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--
 - (i) Rated at 30 percent or more; or
 - (ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or
- (2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

- (1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--
 - (i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or
 - (ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)

(a) "Hazardous material", as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material	Identification No.
(If none, insert "None")	

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(End of clause)

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

- (i) Taking appropriate personnel action against such employee, up to and including termination; or
 - (ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and
- (7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.
- (c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.
- (d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.
- (End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)

- (a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.
- (b) A Contractor-owned or -operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--
- (1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;
 - (2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);
 - (3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);
 - (4) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:
 - (i) Major group code 10 (except 1011, 1081, and 1094.
 - (ii) Major group code 12 (except 1241).
 - (iii) Major group codes 20 through 39.
 - (iv) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(v) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.)), 5169, 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

(5) The facility is not located in the United States or its outlying areas.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

52.225-11 BUY AMERICAN ACT--CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JUN 2003)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Designated country means any of the following countries: Aruba, Austria, Bangladesh, Belgium, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Canada, Cape Verde, Central African Republic, Chad, Comoros, Denmark.

Djibouti, Equatorial Guinea, Finland, France, Gambia, Germany, Greece, Guinea, Guinea-Bissau, Haiti, Hong Kong, Ireland, Israel, Italy, Japan.

Kiribati, Korea, Republic of, Lesotho, Liechtenstein, Luxembourg, Malawi, Maldives, Mali, Mozambique, Nepal, Netherlands, Niger, Norway, Portugal, Rwanda.

Sao Tome and Principe, Sierra Leone, Singapore, Somalia, Spain, Sweden, Switzerland, Tanzania U.R., Togo, Tuvalu, Uganda, United Kingdom, Vanuatu, Western Samoa, Yemen.

Designated country construction material means a construction material that--

- (1) Is wholly the growth, product, or manufacture of a designated country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

Domestic construction material means--

- (1) An unmanufactured construction material mined or produced in the United States; or
- (2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

North American Free Trade Agreement country means Canada or Mexico.

North American Free Trade Agreement country construction material means a construction material that--

- (1) Is wholly the growth, product, or manufacture of a North American Free Trade Agreement (NAFTA) country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a NAFTA country into a new and different construction material distinct from the materials from which it was transformed.

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Construction materials. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and the North American Free Trade Agreement (NAFTA) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country and NAFTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or NAFTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows: NONE

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that--

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1:			
Foreign construction material....			
Domestic construction material....			
Item 2:			
Foreign construction material....			
Domestic construction material....			

\1\ Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act --Construction Materials under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers. (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (OCT 2003)

(a) Except as authorized by the Office of Foreign Assets Control (OFAC) in the Department of the Treasury, the Contractor shall not acquire, for use in the performance of this contract, any supplies or services if any proclamation, Executive order, or statute administered by OFAC, or if OFAC's implementing regulations at 31 CFR chapter V, would prohibit such a transaction by a person subject to the jurisdiction of the United States.

(b) Except as authorized by OFAC, most transactions involving Cuba, Iran, Libya, and Sudan are prohibited, as are most imports from North Korea, into the United States or its outlying areas. Lists of entities and individuals subject to economic sanctions are included in OFAC's List of Specially Designated Nationals and Blocked Persons at <http://www.epls.gov/Terlist1.html>. More information about these restrictions, as well as updates, is available in the OFAC's regulations at 31 CFR chapter V and/or on OFAC's Web site at <http://www.treas.gov/ofac>.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

(End of clause)

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

(End of clause)

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)

In accordance with Section 806(a)(3) of Pub. L. 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

(End of clause)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall

be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____ (for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ _____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$ _____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States
\$ _____. This draft is drawn under Irrevocable Letter of Credit No.

_____.

[Beneficiary Agency]

By: _____

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003)

(a) As used in this clause--

"Contract date" means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties" means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax" means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax" means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

Local taxes includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.232-16 PROGRESS PAYMENTS (APR 2003)

The Government will make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts of \$2,500 or more approved by the Contracting Officer, under the following conditions:

(a) Computation of amounts. (1) Unless the Contractor requests a smaller amount, the Government will compute each progress payment as 80 percent of the Contractor's total costs incurred under this contract whether or not actually paid, plus financing payments to subcontractors (see paragraph (j) of this clause), less the sum of all previous progress payments made by the Government under this contract. The Contracting Officer will consider cost of money that would be allowable under FAR 31.205-10 as an incurred cost for progress payment purposes.

(2) The amount of financing and other payments for supplies and services purchased directly for the contract are limited to the amounts that have been paid by cash, check, or other forms of payment, or that are determined due and will be paid to subcontractors--

(i) In accordance with the terms and conditions of a subcontract or invoice; and

(ii) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(3) The Government will exclude accrued costs of Contractor contributions under employee pension plans until actually paid unless--

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's total costs for progress payments until paid).

(4) The Contractor shall not include the following in total costs for progress payment purposes in paragraph (a)(1) of this clause:

(i) Costs that are not reasonable, allocable to this contract, and consistent with sound and generally accepted accounting principles and practices.

(ii) Costs incurred by subcontractors or suppliers.

(iii) Costs ordinarily capitalized and subject to depreciation or amortization except for the properly depreciated or amortized portion of such costs.

(iv) Payments made or amounts payable to subcontractors or suppliers, except for --

(A) completed work, including partial deliveries, to which the Contractor has acquired title; and

(B) Work under cost-reimbursement or time-and-material subcontracts to which the Contractor has acquired title.

(5) The amount of unliquidated progress payments may exceed neither (i) the progress payments made against incomplete work (including allowable unliquidated progress payments to subcontractors) nor

(ii) the value, for progress payment purposes, of the incomplete work. Incomplete work shall be considered to be the supplies and services required by this contract, for which delivery and invoicing by the Contractor and acceptance by the Government are incomplete.

(6) The total amount of progress payments shall not exceed 80 percent of the total contract price.

(7) If a progress payment or the unliquidated progress payments exceed the amounts permitted by subparagraphs (a)(4) or (a)(5) above, the Contractor shall repay the amount of such excess to the Government on demand.

(8) Notwithstanding any other terms of the contract, the Contractor agrees not to request progress payments in dollar amounts of less than \$2,500. The Contracting Officer may make exceptions.

(b) Liquidation. Except as provided in the Termination for Convenience of the Government clause, all progress payments shall be liquidated by deducting from any payment under this contract, other than advance or progress payments, the unliquidated progress payments, or 80 percent of the amount invoiced, whichever is less. The Contractor shall repay to the Government any amounts required by a retroactive price reduction, after computing liquidations and payments on past invoices at the reduced prices and adjusting the unliquidated progress payments accordingly. The Government reserves the right to unilaterally change from the ordinary liquidation rate to an alternate rate when deemed appropriate for proper contract financing.

(c) Reduction or suspension. The Contracting Officer may reduce or suspend progress payments, increase the rate of liquidation, or take a combination of these actions, after finding on substantial evidence any of the following conditions:

(1) The Contractor failed to comply with any material requirement of this contract (which includes paragraphs (f) and (g) below).

(2) Performance of this contract is endangered by the Contractor's

- (i) failure to make progress or
 - (ii) unsatisfactory financial condition.
- (3) Inventory allocated to this contract substantially exceeds reasonable requirements.
- (4) The Contractor is delinquent in payment of the costs of performing this contract in the ordinary course of business.
- (5) The unliquidated progress payments exceed the fair value of the work accomplished on the undelivered portion of this contract.
- (6) The Contractor is realizing less profit than that reflected in the establishment of any alternate liquidation rate in paragraph (b) above, and that rate is less than the progress payment rate stated in subparagraph (a)(1) above.
- (d) Title.
- (1) Title to the property described in this paragraph (d) shall vest in the Government. Vestiture shall be immediately upon the date of this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.
- (2) "Property," as used in this clause, includes all of the below-described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices.
- (i) Parts, materials, inventories, and work in process;
 - (ii) Special tooling and special test equipment to which the Government is to acquire title under any other clause of this contract;
 - (iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing aids, title to which would not be obtained as special tooling under subparagraph (ii) above; and
 - (iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the Government by other clauses of this contract.
- (3) Although title to property is in the Government under this clause, other applicable clauses of this contract; e.g., the termination or special tooling clauses, shall determine the handling and disposition of the property.
- (4) The Contractor may sell any scrap resulting from production under this contract without requesting the Contracting Officer's approval, but the proceeds shall be credited against the costs of performance.
- (5) To acquire for its own use or dispose of property to which title is vested in the Government under this clause, the Contractor must obtain the Contracting Officer's advance approval of the action and the terms. The Contractor shall (i) exclude the allocable costs of the property from the costs of contract performance, and (ii) repay to the Government any amount of unliquidated progress payments allocable to the property. Repayment may be by cash or credit memorandum.
- (6) When the Contractor completes all of the obligations under this contract, including liquidation of all progress payments, title shall vest in the Contractor for all property (or the proceeds thereof) not--
- (i) Delivered to, and accepted by, the Government under this contract; or

(ii) Incorporated in supplies delivered to, and accepted by, the Government under this contract and to which title is vested in the Government under this clause.

(7) The terms of this contract concerning liability for Government-furnished property shall not apply to property to which the Government acquired title solely under this clause.

(e) Risk of loss. Before delivery to and acceptance by the Government, the Contractor shall bear the risk of loss for property, the title to which vests in the Government under this clause, except to the extent the Government expressly assumes the risk. The Contractor shall repay the Government an amount equal to the unliquidated progress payments that are based on costs allocable to property that is damaged, lost, stolen, or destroyed.

(f) Control of costs and property. The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause.

(g) Reports and access to records. The Contractor shall promptly furnish reports, certificates, financial statements, and other pertinent information reasonably requested by the Contracting Officer for the administration of this clause. Also, the Contractor shall give the Government reasonable opportunity to examine and verify the Contractor's books, records, and accounts.

(h) Special terms regarding default. If this contract is terminated under the Default clause, (i) the Contractor shall, on demand, repay to the Government the amount of unliquidated progress payments and (ii) title shall vest in the Contractor, on full liquidation of progress payments, for all property for which the Government elects not to require delivery under the Default clause. The Government shall be liable for no payment except as provided by the Default clause.

(i) Reservations of rights. (1) No payment or vesting of title under this clause shall (i) excuse the Contractor from performance of obligations under this contract or (ii) constitute a waiver of any of the rights or remedies of the parties under the contract.

(2) The Government's rights and remedies under this clause

(i) Shall not be exclusive but rather shall be in addition to any other rights and remedies provided by law or this contract and

(ii) Shall not be affected by delayed, partial, or omitted exercise of any right, remedy, power, or privilege, nor shall such exercise or any single exercise preclude or impair any further exercise under this clause or the exercise of any other right, power, or privilege of the Government.

(j) Financing payments to subcontractors. The financing payments to subcontractors mentioned in paragraphs (a)(1) and (a)(2) of this clause shall be all financing payments to subcontractors or divisions, if the following conditions are met:

(1) The amounts included are limited to--

(i) The unliquidated remainder of financing payments made; plus

(ii) Any unpaid subcontractor requests for financing payments.

(2) The subcontract or interdivisional order is expected to involve a minimum of approximately 6 months between the beginning of work and the first delivery; or, if the subcontractor is a small business concern, 4 months.

(3) If the financing payments are in the form of progress payments, the terms of the subcontract or interdivisional order concerning progress payments--

(i) Are substantially similar to the terms of this clause for any subcontractor that is a large business concern, or this clause with its Alternate I for any subcontractor that is a small business concern;

(ii) Are at least as favorable to the Government as the terms of this clause;

(iii) Are not more favorable to the subcontractor or division than the terms of this clause are to the Contractor;

(iv) Are in conformance with the requirements of FAR 32.504(e); and

(v) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(4) If the financing payments are in the form of performance-based payments, the terms of the subcontract or interdivisional order concerning payments--

(i) Are substantially similar to the Performance-Based Payments clause at FAR 52.232-32 and meet the criteria for, and definition of, performance-based payments in FAR Part 32;

(ii) Are in conformance with the requirements of FAR 32.504(f); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(5) If the financing payments are in the form of commercial item financing payments, the terms of the subcontract or interdivisional order concerning payments--

(i) Are constructed in accordance with FAR 32.206(c) and included in a subcontract for a commercial item purchase that meets the definition and standards for acquisition of commercial items in FAR Parts 2 and 12;

(ii) Are in conformance with the requirements of FAR 32.504(g); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(6) If financing is in the form of progress payments, the progress payment rate in the subcontract is the customary rate used by the contracting agency, depending on whether the subcontractor is or is not a small business concern.

(7) Concerning any proceeds received by the Government for property to which title has vested in the Government under the subcontract terms, the parties agree that the proceeds shall be applied to reducing any unliquidated financing payments by the Government to the Contractor under this contract.

(8) If no unliquidated financing payments to the Contractor remain, but there are unliquidated financing payments that the Contractor has made to any subcontractor, the Contractor shall be subrogated to all the rights the Government obtained through the terms required by this clause to be in any subcontract, as if all such rights had been assigned and transferred to the Contractor.

(9) To facilitate small business participation in subcontracting under this contract, the Contractor shall provide financing payments to small business concerns, in conformity with the standards for customary contract financing payments stated in Subpart 32.113. The Contractor shall not consider the need for such financing payments as a handicap or adverse factor in the award of subcontracts.

(k) Limitations on undefinitized contract actions. Notwithstanding any other progress payment provisions in this contract, progress payments may not exceed 80 percent of costs incurred on work accomplished under undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes. This limitation shall apply to the costs incurred, as computed in accordance with paragraph (a) of this clause, and shall remain in effect until the contract action is definitized. Costs incurred which are subject to this limitation shall be segregated on Contractor progress payment requests and invoices from those costs eligible for higher progress payment rates. For purposes of progress payment liquidation, as described in paragraph (b) of this clause, progress payments for undefinitized contract actions shall be liquidated at 80 percent of the amount invoiced for work performed under the undefinitized contract action as long as the contract action remains undefinitized. The amount of unliquidated progress payments for undefinitized contract actions shall not exceed 80 percent of the maximum liability of the Government under the undefinitized contract action or such lower limit specified elsewhere in the contract. Separate limits may be specified for separate actions.

(l) Due date. The designated payment office will make progress payments on the 14th day after the designated billing office receives a proper progress payment request. In the event that the Government requires an audit or other review of a specific progress payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date. Progress payments are considered contract financing and are not subject to the interest penalty provisions of the Prompt Payment Act.

(m) Progress payments under indefinite-delivery contracts. The Contractor shall account for and submit progress payment requests under individual orders as if the order constituted a separate contract, unless otherwise specified in this contract.

(End of clause)

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

- (1) The date fixed under this contract.
- (2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.
- (3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.
- (4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.
- (c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

- (a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.
- (b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.
- (c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (OCT 2003)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

- (a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

- (1) The amount to be withheld;
- (2) The specific causes for the withholding under the terms of the subcontract; and
- (3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

- (i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(f) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(g) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register separately in the CCR database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the Contractor, or a financial institution properly recognized under an assignment of claims pursuant to subpart 32.8, is not permitted. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(h) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(i) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (JUL 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to

certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage;

provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

52.236-13 ACCIDENT PREVENTION (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(End of clause)

52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

(End of clause)

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

- (1) the date, circumstances, and source of the order and
- (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any

increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

52.243-5 CHANGES AND CHANGED CONDITIONS (APR 1984)

(a) The Contracting Officer may, in writing, order changes in the drawings and specifications within the general scope of the contract.

(b) The Contractor shall promptly notify the Contracting Officer, in writing, of subsurface or latent physical conditions differing materially from those indicated in this contract or unknown unusual physical conditions at the site before proceeding with the work.

(c) If changes under paragraph (a) or conditions under paragraph (b) increase or decrease the cost of, or time required for performing the work, the Contracting Officer shall make an equitable adjustment (see paragraph (d)) upon submittal of a "proposal for adjustment" (hereafter referred to as proposal) by the Contractor before final payment under the contract.

(d) The Contracting Officer shall not make an equitable adjustment under paragraph (b) unless--

(1) The Contractor has submitted and the Contracting Officer has received the required written notice; or

(2) The Contracting Officer waives the requirement for the written notice.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause.

(End of clause)

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (APR 2003)

(a) Definitions.

"Commercial item", has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c) (1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

52.245-1 PROPERTY RECORDS (APR 1984)

The Government shall maintain the Government's official property records in connection with Government property under this contract. The Government Property clause is hereby modified by deleting the requirement for the Contractor to maintain such records.

(End of clause)

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

- (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;
- (3) Constitute or imply acceptance; or
- (4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.
- (d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.
- (e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.
- (f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.
- (h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.
- (b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--
 - (i) In deliverable end item quantities only; or
 - (ii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:
 - (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
 - (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
 - (3) A separate, detailed cost estimate for
 - (i) the affected portions of the existing contract requirement and
 - (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.
 - (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
 - (5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering-- Construction clause of contract, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work

terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

- (i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;
 - (ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(2)(i) of this clause; and
 - (iii) A sum, as profit on subdivision (g)(2)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.
- (3) The reasonable costs of settlement of the work terminated, including--
- (i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
 - (ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and
 - (iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.
- (h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.
- (i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.
- (j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.
- (k) In arriving at the amount due the Contractor under this clause, there shall be deducted--
- (1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;
 - (2) Any claim which the Government has against the Contractor under this contract; and
 - (3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.
- (l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.
- (m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

- (i) acts of God or of the public enemy,
- (ii) acts of the Government in either its sovereign or contractual capacity,
- (iii) acts of another Contractor in the performance of a contract with the Government,
- (iv) fires,
- (v) floods,
- (vi) epidemics,
- (vii) quarantine restrictions,
- (viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) "Arising out of a contract with the DoD" means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION ALTERNATE A (NOV 2003)

(a) Definitions. As used in this clause--

“Central Contractor Registration (CCR) database” means the primary Government repository for contractor information required for the conduct of business with the Government.

“Commercial and Government Entity (CAGE) code” means--

(1) A code assigned by the Defense Logistics Information Service (DLIS) to identify a commercial or Government entity; or

(2) A code assigned by a member of the North Atlantic Treaty Organization that DLIS records and maintains in the CAGE master file. This type of code is known as an “NCAGE code.”

“Data Universal Numbering System (DUNS) number” means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

“Data Universal Numbering System +4 (DUNS+4) number” means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11 of the Federal Acquisition Regulation) for the same parent concern.

“Registered in the CCR database” means that--

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database;

(2) The Contractor's CAGE code is in the CCR database; and

(3) The Government has validated all mandatory data fields and has marked the records “Active.”

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company Physical Street Address, City, State, and Zip Code.

(iv) Company Mailing Address, City, State and Zip Code (if separate from physical).

(v) Company Telephone Number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(g)(1)(i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in Subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of Subpart 42.12 of the FAR; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (g)(1)(i) of this clause, or fails to perform the agreement at paragraph (g)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.

(h) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423, or 269-961-5757.

(End of clause)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

The term "pricing adjustment," as used in paragraph (a) of the clauses entitled "Price Reduction for Defective Cost or Pricing Data - Modifications," "Subcontractor Cost or Pricing Data," and "Subcontractor Cost or Pricing Data - Modifications," means the aggregate increases and/or decreases in cost plus applicable profits.

(End of clause)

252.223-7001 HAZARD WARNING LABELS (DEC 1991)

(a) "Hazardous material," as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

- (1) Federal Insecticide, Fungicide and Rodenticide Act;
- (2) Federal Food, Drug and Cosmetics Act;
- (3) Consumer Product Safety Act;
- (4) Federal Hazardous Substances Act; or
- (5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert "None.")

ACT

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

252.223-7002 SAFETY PRECAUTIONS FOR AMMUNITION AND EXPLOSIVES (MAY 1994)

(a) Definition. "Ammunition and explosives," as used in this clause --

(1) Means liquid and solid propellants and explosives, pyrotechnics, incendiaries and smokes in the following forms:

(i) Bulk,

- (ii) Ammunition;
- (iii) Rockets;
- (iv) Missiles;
- (v) Warheads;
- (vi) Devices; and
- (vii) Components of (i) through (vi), except for wholly inert items.

(2) This definition does not include the following, unless the Contractor is using or incorporating these materials for initiation, propulsion, or detonation as an integral or component part of an explosive, an ammunition or explosive end item, or of a weapon system --

- (i) Inert components containing no explosives, propellants, or pyrotechnics;
- (ii) Flammable liquids;
- (iii) Acids;
- (iv) Powdered metals; or
- (v) Oxidizers;
- (vi) Other materials having fire or explosive characteristics.

(b) Safety requirements.

(1) The Contractor shall comply with the requirements of the DoD Contractors' Safety Manual for Ammunition and Explosives, DoD 4145.26-M hereafter referred to as "the manual", in effect on the date of the solicitation for this contract. The Contractor shall also comply with any other additional requirements included in the schedule of this contract.

(2) The Contractor shall allow the Government access to the Contractor's facilities, personnel, and safety program documentation. The Contractor shall allow authorized Government representatives to evaluate safety programs, implementation, and facilities.

(c) Noncompliance with the manual.

(1) If the Contracting Officer notifies the Contractor of any noncompliance with the manual or schedule provisions, the Contractor shall take immediate steps to correct the noncompliance. The Contractor is not entitled to reimbursement of costs incurred to correct noncompliances unless such reimbursement is specified elsewhere in the contract.

(2) The Contractor has 30 days from the date of notification by the Contracting Officer to correct the noncompliance and inform the Contracting Officer of the actions taken. The Contracting Officer may direct a different time period for the correction of noncompliances.

(3) If the Contractor refuses or fails to correct noncompliances within the time period specified by the Contracting Officer, the Government has the right to direct the Contractor to cease performance on all or part of this contract. The

Contractor shall not resume performance until the Contracting Officer is satisfied that the corrective action was effective and the Contracting Officer so informs the Contractor.

(4) The Contracting Officer may remove Government personnel at any time the Contractor is in noncompliance with any safety requirement of this clause.

(5) If the direction to cease work or the removal of Government personnel results in increased costs to the Contractor, the Contractor shall not be entitled to an adjustment in the contract price or a change in the delivery or performance schedule unless the Contracting Officer later determines that the Contractor had in fact complied with the manual or schedule provisions. If the Contractor is entitled to an equitable adjustment, it shall be made in accordance with the Changes clause of this contract.

(d) Mishaps. If a mishap involving ammunition or explosives occurs, the Contractor shall --

(1) Notify the Contracting Officer immediately;

(2) Conduct an investigation in accordance with other provisions of this contract or as required by the Contracting Officer; and

(3) Submit a written report to the Contracting Officer.

(e) Contractor responsibility for safety. (1) Nothing in this clause, nor any Government action or failure to act in surveillance of this contract, shall relieve the Contractor of its responsibility for the safety of --

(i) The Contractor's personnel and property;

(ii) The Government's personnel and property; or

(iii) The general public.

(2) Nothing in this clause shall relieve the Contractor of its responsibility for complying with applicable Federal, State, and local laws, ordinances, codes, and regulations (including those requiring the obtaining of licenses and permits) in connection with the performance of this contract.

(f) Contractor responsibility for contract performance. (1) Neither the number or frequency of inspections performed by the Government, nor the degree of surveillance exercised by the Government, relieve the Contractor of its responsibility for contract performance.

(2) If the Government acts or fails to act in surveillance or enforcement of the safety requirements of this contract, this does not impose or add to any liability of the Government.

(g) Subcontractors. (1) The Contractor shall insert this clause, including this paragraph (g), in every subcontract that involves ammunition or explosives.

(i) The clause shall include a provision allowing authorized Government safety representatives to evaluate subcontractor safety programs, implementation, and facilities as the Government determines necessary.

(ii) Note: The Government Contracting Officer or authorized representative shall notify the prime Contractor of all findings concerning subcontractor safety and compliance with the manual. The Contracting Officer or authorized representative may furnish copies to the subcontractor. The Contractor in turn shall communicate directly with the subcontractor, substituting its name for references to "the Government". The Contractor and higher tier subcontractors shall also include provisions to allow direction to cease performance of the subcontract if a serious

uncorrected or recurring safety deficiency potentially causes an imminent hazard to DoD personnel, property, or contract performance.

(2) The Contractor agrees to ensure that the subcontractor complies with all contract safety requirements. The Contractor will determine the best method for verifying the adequacy of the subcontractor's compliance.

(3) The Contractor shall ensure that the subcontractor understands and agrees to the Government's right to access to the subcontractor's facilities, personnel, and safety program documentation to perform safety surveys. The Government performs these safety surveys of subcontractor facilities solely to prevent the occurrence of any mishap which would endanger the safety of DoD personnel or otherwise adversely impact upon the Government's contractual interests.

(4) The Contractor shall notify the Contracting Officer or authorized representative before issuing any subcontract when it involves ammunition or explosives. If the proposed subcontract represents a change in the place of performance, the Contractor shall request approval for such change in accordance with the clause of this contract entitled "Change in Place of Performance - Ammunition and Explosives".

(End of clause)

252.223-7004 DRUG-FREE WORK FORCE (SEP 1988)

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security; health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the objectives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, and

efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing--

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employee has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2.1 of subpart B of the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11, 1988), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such times as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing program shall not apply to the extent that are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

(End of clause)

252.226-7001 Utilization of Indian Organizations and Indian-Owned Economic Enterprises-DoD Contracts (Sep 2001)

(a) Definitions. As used in this clause--

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452 (c).

“Interested party” means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contract shall use its best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless and interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs, Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street NW, MS-2626-MIB, Washington, DC 20240-4000. The BIA will determine the eligibility and will notify the Contracting Officer. No incentive payment will be made--

(1) Within 59 working days of subcontract award;

(2) While a challenge is pending; or

(3) If a subcontractor is determined to be an ineligible participant.

(e)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee contract.

(iii) The target cost and ceiling price of a fixed-price incentive contract.

(iv) The price of a firm-fixed-price contract.

(2) The amount of the adjustment that may be made to the contract is 5 percent of the estimated cost, target cost, or firm-fixed price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(3) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(4) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor.

(5) If the Contractor requests and receives an adjustment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the adjustment.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that--

(1) Are for other than commercial items; and

(2) Are expected to exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

(End of clause)

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

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SECTION 00800

SPECIAL CLAUSES

SC-1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) (FAR 52.211-10).

The Contractor shall be required to (a) commence work under this Contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 180 calendar days after date of receipt by Contractor of the notice to proceed. The time stated for completion shall include final cleanup of the premises. See Section 01005 SITE SPECIFIC SUPPLEMENTARY REQUIREMENTS, paragraph 1.6 for construction sequence and scheduling requirements.

SC-1.1 DELETED

SC-2. LIQUIDATED DAMAGES - CONSTRUCTION (SEP 2000) (FAR 52.211-12)

(a) If the Contractor fails to complete the work within the time specified in the Contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$730.00 for each day of delay.

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

SC-3. TIME EXTENSIONS (APR 1984) (FAR 52.211-13)

Notwithstanding any other provisions of this Contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the Contract completion date will be extended only for those specific elements so delayed and that the remaining Contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule.

SC-4. VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS (MAR 1995) (EFARS 52.211-5001): This variation in estimated quantities clause is applicable only to Items No. 0002 and 0003.

(a) Variation from the estimated quantity in the actual work performed under any second or subsequent sub-item or elimination of all work under such a second or subsequent sub-item will not be the basis for an adjustment in contract unit price.

(b) Where the actual quantity of work performed for Items No. 0002 and 0003 is less than 85 percent of the quantity of the first sub-item listed under such item, the Contractor will be paid at the contract unit price for that sub-item for the actual quantity of work performed and, in addition, an equitable adjustment shall be made in accordance with the clause FAR 52.211-18, Variation in Estimated Quantities.

(c) If the actual quantity of work performed under Items No. 0002 and 0003 exceeds 115 percent or is less than 85 percent of the total estimated quantity of the sub-item under that item and/or if the quantity of the work performed under the second sub-item or any subsequent sub-item under Items No. 0003 exceeds 115% or is less than 85% of the estimated quantity of any such sub-item, and if such variation causes an increase or a decrease in the time required for performance of this contract the contract completion time will be adjusted in accordance with the clause FAR 52.211-18, Variation in Estimated Quantities.

SC-5. INSURANCE (JAN 1997) (FAR 52.228-5)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance period of this Contract at least the kinds and minimum amounts of insurance required in the Insurance Liability Schedule and elsewhere in the Contract.

(b) Before commencing work under this Contract, the Contractor shall certify to the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective:

(1) for such period as the laws of the State in which this Contract is to be performed prescribe; or

(2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this Contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the Contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

SC-5.1 REQUIRED INSURANCE IN ACCORDANCE WITH FAR 28.307-2

(1) Workers' Compensation and Employer's Liability. Contractors are required to comply with applicable Federal and State workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when Contract operations are so commingled with a Contractor's commercial operation that it would not be practical to require this coverage. Employer's liability coverage of at least \$100,000 shall be required, except in states with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(2) General Liability.

(a) The Contracting Officer shall require bodily injury liability insurance coverage written on the comprehensive form of policy of at least \$500,000 per occurrence.

(b) Property damage liability insurance shall be required only in special circumstances as determined by the agency.

(3) Automobile liability. The Contracting Officer shall require automobile liability insurance written on the comprehensive form of policy. The policy shall provide for bodily injury and property damage liability covering the operation of all automobiles used in connection with performing the Contract. Policies covering automobiles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(4) Environmental Liability. If this contract includes the transport, treatment, storage, or disposal of hazardous material waste the following coverage is required.

The Contractor shall ensure the transporter and disposal facility have liability insurance in effect for claims arising out of the death or bodily injury and property damage from hazardous material/waste transport, treatment, storage and disposal, including vehicle liability and legal defense costs in the amount of \$1,000,000.00 as evidenced by a certificate of insurance for General, Automobile, and Environmental Liability Coverage. Proof of this insurance shall be provided to the Contracting Officer.

SC- 5.2 Extra Insurance Coverage

5.2.1 Contractor shall protect, defend, indemnify and hold harmless, King County, the City of Snoqualmie, the State of Washington, the Snoqualmie Tribe, and PSE, their appointed and elected officials, officers, directors, employees, and agents (collectively "Indemnified Parties") from and against any and all actions, claims, costs, damages, demands, expenses, fines, judgments, liens, liabilities and penalties of any kind whatsoever arising from the tortious or wrongful acts, errors, or omissions of the Contractor or any of its subcontractors.

The foregoing indemnity is specifically and expressly intended to constitute a waiver of indemnifying party's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects the indemnified party(s) only, and only to the extent necessary to provide the indemnified party with a full and complete indemnity of claims made by the indemnitor's employees. The parties acknowledge that these provisions were specifically negotiated and agreed by them.

Intended Third Party Beneficiaries. It is the express intent and agreement of the Contracting Parties of this Contract that the "Indemnified Parties" identified above, other than the Government, SHALL BE THIRD PARTY BENEFICIARIES OF SUCH INDEMNIFICATION PROVISIONS WITH FULL RIGHTS TO ENFORCE SUCH INDEMNIFICATION PROVISIONS.

5.2.2 Contractor shall procure and maintain during the entire period of its performance under this Contract the following insurance policies:

1. By requiring this insurance coverage, the Government shall not be deemed or construed to have assessed the risks that may be applicable to the Contractor under this Contract. The Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

2. Nothing contained within these insurance requirements shall be deemed to limit the scope, application and/or limits of the coverage afforded, which coverage will apply to each insured to the full extent provided by the terms and conditions of the policy(s). Nothing contained within this provision shall affect and/or alter the application of any other provision contained within this Agreement. The limits or scope of coverages shall not limit or qualify the Contractor's liability or obligations to the Indemnified Parties.

3. The Contractor shall furnish to the Contracting Officer a certificate or statement of the insurance required under this Section prior to the commencement of work under this Contract. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Indemnified Parties in such insurance shall not be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 45 days after written notice thereof to the Contracting Officer and the Indemnified Parties. The Contracting Officer and the Indemnified Parties shall have the right, upon written notice, to receive certified copies of the policies required hereunder.

4. The Contractor will be required to submit to the Contracting Officer a certification from the Contractor's insurance carrier(s) that the amount inserted by the Contractor in the item entitled "Additional Cost for Extra Insurance" of the Price Schedule represents only the additional premium paid by line of insurance coverage by the Contractor as a direct result of additional insurance costs to meet the specific insurance requirements of this Section and excludes those premium costs which would have otherwise been incurred by the Contractor if the extra insurance requirements had not been exercised.

5. Payment items for insurance premiums procured by the Contractor under Paragraph 4 of this Section shall be made at the contract lump sum price listed in the Bidding Schedule as "Additional Cost for Extra Insurance."

The Contractor shall procure and maintain for the duration of this Contract, insurance against claims for injuries to persons or damages to property, including products-completed operations which may arise from, or in connection with, the performance of work hereunder by the Contractor, its agents, representative, employees, and/or sub-contractors. The cost of such insurance shall be paid by the Contractor or sub-contractor. The Contractor may furnish separate certificates of insurance and policy endorsements from each sub-contractor as evidence of compliance with the insurance requirements of this Contract.

6. For All Coverages:

Each insurance policy shall be written on an "occurrence" form; excepting that insurance for professional liability, errors and omissions when required, may be acceptable on a "claims made" form.

If coverage is approved and purchased on a "claims made" basis, the Contractor warrants continuation of coverage, either through policy renewals or the purchase of an extended

discovery period, if such extended coverage is available, for not less than three years from the date of completion of the work which is the subject of this Contract.

(A) Minimum Scope Of Insurance

Coverage shall be at least as broad as:

- (1) General Liability: Insurance Services Office form number (CG 00 01 Ed. 11-88) covering COMMERCIAL GENERAL LIABILITY including products-completed operations. The policy shall not exclude coverage for damage from sudden and accidental explosion, collapse and/or underground damage (XCU).
- (2) Professional Liability: Professional Liability, Errors and Omissions coverage. In the event that services delivered pursuant to this Contract either directly or indirectly involve or require professional services, Professional Liability, Errors and Omissions coverage shall be provided. "Professional Services", for the purpose of this Contract section shall mean any services provided by a licensed professional.
- (3) Automobile Liability: Insurance Services Office form number (CA 00 01 Ed. 12-90) covering BUSINESS AUTO COVERAGE, symbol 1 "any auto"; or the combination of symbols 2, 8, and 9. Coverage shall not exclude incidents relating to the transport of blasting materials. If "pollutants" as excluded under the Standard Commercial Auto policy are to be transported, endorsements CA 9948 and MCS-90 are required.
- (4) Workers' Compensation: Workers' Compensation coverage, as required by the Industrial Insurance Act of the State of Washington.
- (5) Employers Liability or "Stop-Gap": The protection provided by the Workers Compensation policy Part 2 (Employers Liability) or, in states with monopolistic state funds, the protection provided by the "Stop Gap" endorsement to the General Liability policy.
- (6) Blasting Liability: Liability coverage for bodily injury, personal injury and property damage, resulting from incidents relating to Blasting Activities. (This coverage may be provided by a subcontractor engaged for the sole purpose of the blasting activities).
- (7) Contractor's Pollution Liability: coverage to cover sudden and non-sudden bodily injury and/or property damage to include the physical injury or destruction of tangible property, loss of use, clean up costs and the loss of use of tangible property that has not been physically injured or destroyed.

(B) Minimum Limits of Insurance

The Contractor shall maintain limits no less than, for:

General Liability: \$ 10,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage, and for those policies with aggregate limits, a \$10,000,000 aggregate limit.

Professional Liability, Errors and Omissions: \$ 1,000,000

Automobile Liability: \$ 5,000,000 combined single limit per accident for bodily injury and property damage.

Workers' Compensation: Statutory requirements of the State of residency.

Employers' Liability or "Stop Gap" coverage: \$ 1,000,000

Blasting Liability Coverage: \$ 15,000,000 per occurrence.

Contractor's Pollution Coverage: \$ 1,000,000 per occurrence.

(C) Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to, and approved by, the Government. The deductible and/or self-insured retention of the policies shall not limit or apply to the Contractor's liability to the Indemnified Parties and shall be the sole responsibility of the Contractor.

(D) Other Insurance Provisions

The insurance coverage(s) required in this Contract are to contain, or be endorsed to contain the following provisions:

(1) Liability Policy(s) (Except Workers Compensation and Professional):

- a. The Indemnified Parties are to be covered as additional insureds as respects liability arising out of activities performed by or on behalf of the Contractor in connection with this Contract.
- b. The Contractor's insurance coverage shall be primary insurance as respects Indemnified Parties. Any insurance and/or self-insurance maintained by The Indemnified Parties shall not contribute with the Contractor's insurance or benefit the Contractor in any way.
- c. The Contractor's insurance coverage shall apply separately to each insured against whom a claim is made and/or lawsuit is brought, except with respect to the limits of the insurer's liability.
- d. The General Liability policy shall include a Per Project Aggregate.

(2) All Policies:

- a. Coverage shall not be suspended, voided, canceled, reduced in coverage or in limits, except by the reduction of the applicable aggregate limit by claims paid, until after forty-five (45) calendar days prior written notice has been given to the Government.

(E) Acceptability of Insurers

Unless otherwise accepted by the Government:

Insurance coverage is to be placed with insurers with a Bests' rating of no less than A: VIII, or, if not rated with Bests', with minimum surpluses the equivalent of Bests' surplus size VIII. Professional Liability, Errors and Omissions insurance coverage may be placed with insurers with a Bests' rating of B+:VII. Any exception must be approved by the Government. If at any time of the foregoing policies fail to meet the above minimum requirements, the Contractor shall, upon notice to that effect from the Government, promptly obtain a new policy, and shall submit the same to the Government, with the appropriate certificates and endorsements, for approval.

(F) Verification of Coverage

The Contractor shall furnish the Contracting Officer and The Indemnified Parties, upon written notice, with certificates of insurance and endorsements required by this Contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements for each insurance policy are to be on forms approved by the Government and are to be received and approved by the Government prior to the commencement of activities associated with the Contract. The Contracting Officer and the Indemnified Parties reserve the right to require complete, certified copies of all required insurance policies at any time, upon written notice.

If Professional Liability coverage is required under this contract, the Certificate of Insurance provided by the Contractor shall specifically state that the activities required under contract for the project are included under this policy.

(G) Sub-contractors

The Contractor shall include all sub-contractors as insureds under its policies, or shall furnish separate certificates of insurance and policy endorsements from each sub-contractor. Insurance coverages provided by sub-contractors as evidence of compliance with the insurance requirements of this Contract shall be subject to all of the requirements stated herein.

SC-6. DELETED

SC-7. PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984) (FAR 52.236-1):
The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty percent (20%) of the total amount of work to be performed under the Contract. The percentage may be reduced by a supplemental agreement to this Contract if, during

performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

SC-8. PHYSICAL DATA (APR 1984) (FAR 52.236-4): Data and information furnished or referred to below is for the Contractor's information. The Government will not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) Physical Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations by test holes shown on the drawings.

(b) Weather Conditions: Each bidder shall be satisfied before submitting his bid as to the hazards likely to arise from weather conditions. Complete weather records and reports may be obtained from any National Weather Service Office.

(c) Transportation Facilities: Each bidder, before submitting his bid, shall make an investigation of the conditions of existing public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the jobsite. The unavailability of transportation facilities or limitations thereon shall not become a basis for claims for damages or extension of time for completion of the work.

(d) Right-of-Way: The right-of-way for the work covered by these specifications will be furnished by the Government. The Contractor may use such portions of the land within the right-of-way not otherwise occupied as may be designated by the Contracting Officer. The Contractor shall, without expense to the Government, and at any time during the progress of the work when space is needed within the right-of-way for any other purposes, promptly vacate and clean up any part of the grounds that have been allotted to, or have been in use by, him when directed to do so by the Contracting Officer. The Contractor shall keep the buildings and grounds in use by him at the site of the work in an orderly and sanitary condition. Should the Contractor require additional working space or lands for material yards, job offices, or other purposes, he shall obtain such additional lands or easements at his expense.

(e) Average Daily River Flow: The average daily river flow for the Snoqualmie River at Snoqualmie, Washington is shown on Fig 1 - AVERAGE DAILY FLOW, attached at the end of this Section.

SC-9. DELETED

SC-10. LAYOUT OF WORK (APR 1984) (FAR 52.236-17): The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due, or to become due, to the Contractor.

SC-11 THROUGH SC-13. DELETED

SC-14. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAY 1999)-(EFARS 52.231-5000)

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region VIII. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(e) Copies of EP1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" Volumes 1 through 12 are available in Portable Document Format (PDF) only and can be viewed or downloaded at <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/cecw.htm>. Copies of the CD-ROM (Volumes 1-12) are also available through either the Superintendent of Documents or Government bookstores. For additional information telephone 202-512-2250, or access on the Internet at http://www.access.gpo.gov/su_docs.

SC-15. PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAY 1999)-(EFARS 52.232-5000)

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (2) materials

that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the following items: Any other construction material stored offsite may be considered in determining the amount of a progress payment.

SC-16 AND SC-17 DELETED.

SC-18. CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (OCT 1996) (52.0236-4001 EBS)

(a) The Government--

(1) Will provide the Contractor, without charge, one set of contract drawings and one set of specifications in electronic format on a compact disk. The Government will not give the Contractor any hard copy paper drawings or specifications for any contract resulting from this solicitation.

(b) The Contractor shall--

(1) check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies; and

(4) Be responsible for any errors which might have been avoided by complying with this paragraph (b).

(c) Large scale drawings shall, in general, govern small scale drawings. Figures marked on drawings shall, in general, be followed in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work, but shall be performed as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified in the index of drawings attached at the end of the Special Clauses.

SC-19 THROUGH SC-23 DELETED.

INDEX OF DRAWINGS

Snoqualmie River Project
Snoqualmie Falls, Wa.

File No. E-2-6-564

SHEET NUMBER	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
1	G-1	Title, Vicinity Map and Drawing Index		03DEC11
2	G-2	Drawing Index		03DEC11
3	G-3	Real Estate Boundaries		03DEC11
4	GT-1	Locations of Explorations and Civil Excavation Site Plan		03DEC11
5	GT-2	Boring Logs		03DEC11
6	C-1	Overall Site Plan and List of abbreviations		03DEC11
7	C-2	Survey Plan		03DEC11
8	C-3	Right Bank Excavation		03DEC11
9	C-4	Left Bank Excavation		03DEC11
10	C-5	LWD Placement & Left Bank Road Detail		03DEC11
11	C-6	Footbridge Plan and Retaining Wall		03DEC11
12	C-7	Right Bank Inspection Radius		03DEC11
13	C-8	Road Profiles		03DEC11
14	C-9	Right Bank Cross-Sections 1		03DEC11
15	C-10	Right Bank Cross Sections 2		03DEC11
16	C-11	Right Bank Cross Sections 3		03DEC11
17	C-12	Right Bank Cross Sections 4		03DEC11
18	C-13	Left Bank Cross Sections 1		03DEC11
19	C-14	Left Bank Cross Sections 2		03DEC11
20	C-15	Left Bank Cross Sections 3		03DEC11
21	C-16	Left Bank Cross Sections 4		03DEC11
22	C-17	Left Bank Cross Sections 5		03DEC11
23	C-18	Left Bank Cross Sections 6		03DEC11
24	C-19	Left Bank Cross-Sections 7		03DEC11
25	C-20	Details 1		03DEC11
26	C-21	Details 2		03DEC11

SHEET NUMBER	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
27	C-22	Details 3		03DEC11
28	C-23	Details 4		03DEC11
29	C-24	Details 5		03DEC11
30	L-1	Plant Schedule		03DEC11
31	L-2	Planting Plan		03DEC11
32	S-1	Structural Notes		03DEC11
33	S-2	Retaining Wall Plan and Elevation 1		03DEC11
34	S-3	Retaining Wall Plan and Elevation 2		03DEC11
35	S-4	Retaining Wall Notes		03DEC11
36	S-5	Retaining Wall Details		03DEC11
37	S-6	Retaining Wall Schedule		03DEC11

REFERENCE DRAWINGS

Reference drawings provided show conditions at time of construction. These drawings are furnished for information only (except as noted below) and the Government does not warrant that conditions will be exactly as shown. Minor deviations can be anticipated and shall not be the basis for a claim for extra compensation. Note: Ref Drawings R-9 and R-10 include some work this contract.

File No. E-2-6-564

REF DWG NUMBER	ORIGINAL FILE NO.	TITLE	REVISION NUMBER	DATE
		<u>Puget Sound Power and Light Co.</u>		
R-1	D-11267	Fence Modifications – Snoqualmie Switching Station		96MAR17
R-2	D-5596	Foundation Plan – Snoqualmie Switching Station	1	85JAN30
R-3	E-69	Profile Intake to Tailrace – Snoqualmie Falls Development		34OCT23
R-4	F-367	Plan and Section Elevations of Generating Station No. 1 “Cavity” – Snoqualmie Falls		17SEP7
R-5	F-5233	Project Area and Boundary – Snoqualmie Falls Project		
R-6	F-5255	General Plan – Snoqualmie Falls Project		89SEP

Project

REF DWG NUMBER	ORIGINAL FILE NO.	TITLE	REVISION NUMBER	DATE
		<u>Seattle-Tacoma Power Co..</u>		
R-7	F-SW470	Plan & Elevation of Headwork	3	10AUG24
R-8	F-SW472	General Sections through Headworks		10JAN20
		<u>Puget Sound Energy</u>		
R-9	PSE0023.RD. IMP	Snoqualmie Substation Access Road (Sheet 1 of 2)		03NOV11
R-10	PSE0023.RD. IMP	Snoqualmie Substation Sections and Details (Sheet 2 of 2)		03NOV11
R-11	103000390	Snoqualmie Substation Feeder Relocate		03NOV26

STANDARD DETAILS BOUND IN THE SPECIFICATIONS

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE
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SECTION 01501 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1, 2, & 3	Civil Works Project Identification Sign	REV 07APR88
1	Hard Hat Sign	10SEP90

AVERAGE DAILY FLOW

USGS Gage # 12144500, Snoqualmie River Near Snoqualmie, WA.

Average Daily Flow Statistics based on 46 years of record.

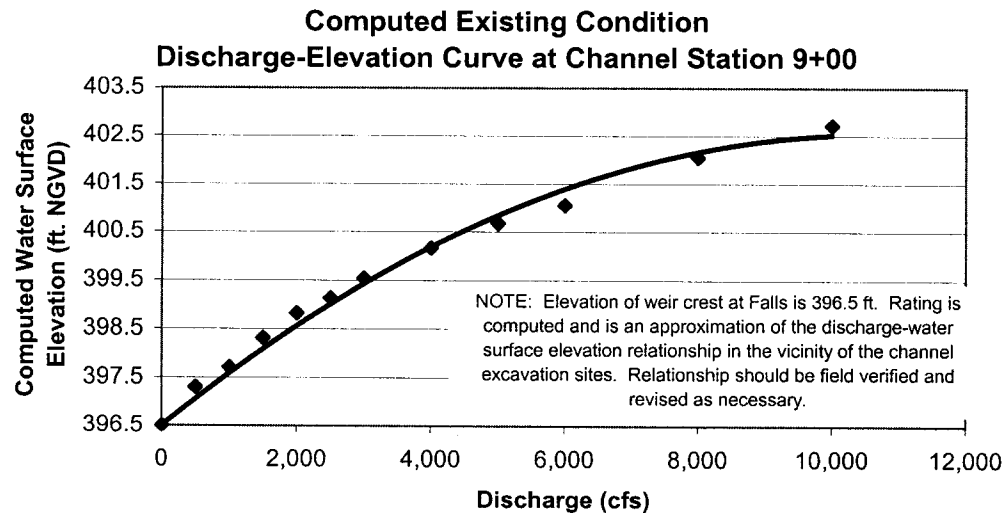
Units: cubic feet per second.

Gage is located 0.3 miles downstream of Snoqualmie Falls.

	January	February	March	April	May	June	July	August	September	October	November	December
# Days	1,426	1,299	1,426	1,380	1,457	1,410	1,442	1,395	1,380	1,395	1,350	1,395
Avg Day	3,661	3,066	2,501	3,008	3,809	3,657	1,858	862	1,156	1,847	3,579	3,661
Max Day	36,700	34,500	24,600	17,600	11,600	16,300	13,300	5,240	12,800	28,400	54,700	45,600
Min Day	642	700	759	1,060	1,130	674	400	88	245	260	329	608
Min Month	1,162	1,215	1,367	1,478	1,895	1,077	536	451	342	348	716	1,211
Max Month	6,414	6,676	6,735	4,696	6,055	7,568	4,393	2,263	3,937	3,931	10,097	8,886

Average Daily Flow Exceedences

1%	21,802	18,604	9,472	9,876	9,174	9,891	5,721	3,301	7,048	10,200	21,950	20,025
10%	7,350	5,521	3,970	4,810	5,896	6,020	3,568	1,465	2,300	3,955	6,780	6,945
20%	4,680	3,752	3,056	3,780	4,882	4,910	2,570	1,080	1,490	2,650	4,550	4,660
50%	2,400	2,185	2,090	2,550	3,425	3,240	1,480	680	705	1,160	2,490	2,490
90%	1,140	1,160	1,220	1,550	2,230	1,830	763	455	403	446	1,020	1,260



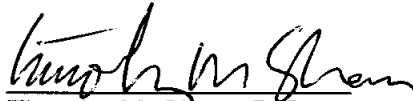
Notes:

- 1) Discharge-elevation curve is approximate and based on HEC-RAS model computations at channel station 9+00 (see Plate GT-1 for channel stationing).
- 2) Computations suggest the water surface does not vary substantially (less than 0.3 feet) for a given discharge between the footbridge at channel station 0+00 and station 11+50. This statement applies over the flow range presented.
- 3) Rating uncertain downstream of the footbridge at station 0+00 due to powerhouse intake influences.
- 4) Contractor may field verify the discharge-elevations curve; real-time USGS data is available at:
http://nwis.waterdata.usgs.gov/nwis/uv/?site_no=12144500&agency_cd=USGS

DESIGN AUTHENTICATION

SNOQUALMIE RIVER CHANNEL WIDENING PROJECT SNOQUALMIE FALLS, WASHINGTON

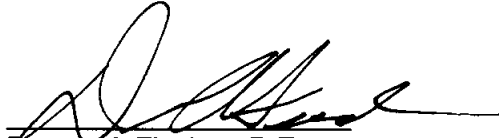
Signatures affixed below indicate the drawings and specifications included in this solicitation were prepared, reviewed and certified in accordance with Department of Army Engineer Regulation.



Timothy M. Shaw, P.E.
Project Manager
Civil Projects Branch



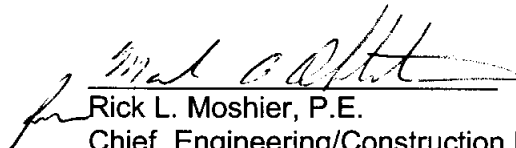
Dean M. Schmidt
Tech. Eng. & Review Section
Construction Branch



Dennis A. Fischer, P.E.
Chief, Civil and Soils Section
Design Branch



Mark a. Ohlstrom, P.E.
Chief, Design Branch



Rick L. Moshier, P.E.
Chief, Engineering/Construction Division

This project was designed by the U.S. Army Corps of Engineers, Seattle District. The initials and/or signatures and registration designations of individuals appearing on these project documents are within the scope of their employment as required by ER 1110-1-8152, ENGINEERING AND DESIGN PROFESSIONAL REGISTRATION.

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WAIS Document Retrieval
GENERAL DECISION WA030001 06/13/2003 WA1

Date: June 13, 2003
General Decision Number WA030001

Superseded General Decision No. WA020001

State: Washington

Construction Type:
DREDGING
HEAVY
HIGHWAY

County(ies):
STATEWIDE

HEAVY AND HIGHWAY AND DREDGING CONSTRUCTION PROJECTS
(Excludes D.O.E. Hanford Site in Benton and Franklin Counties)

Modification Number	Publication Date
0	06/13/2003

COUNTY(ies):
STATEWIDE

CARP0001W 06/01/2002

	Rates	Fringes
COLUMBIA RIVER AREA - ADAMS, BENTON, COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GRANT, OKANOGAN (EAST OF THE 120TH MERIDIAN) AND WALLA WALLA COUNTIES		

CARPENTERS:

GROUP 1:	23.58	6.25
GROUP 2:	24.69	6.25
GROUP 3:	23.85	6.25
GROUP 4:	23.58	6.25
GROUP 5:	58.43	6.25
GROUP 6:	27.72	6.25

SPOKANE AREA: ASOTIN, GARFIELD, LINCOLN, PEND OREILLE, SPOKANE, STEVENS AND WHITMAN COUNTIES

CARPENTERS:

GROUP 1:	22.91	6.25
GROUP 2:	24.01	6.25
GROUP 3:	23.17	6.25
GROUP 4:	22.91	6.25
GROUP 5:	56.77	6.25
GROUP 6:	27.00	6.25

CARPENTERS CLASSIFICATIONS

GROUP 1: Carpenter; Burner-Welder; Rigger and Signaler;

Insulators (all types), Acoustical, Drywall and Metal Studs, Metal Panels and Partitions; Floor Layer, Sander, Finisher and Astro Turf; Layout Carpenters; Form Builder; Rough Framers; Outside or Inside Finisher, including doors, windows, and jams; Sawfiler; Shingler (wood, composition) Solar, Fiberglass, Aluminum or Metal; Scaffold Erecting and Dismantling; Stationary Saw-Off Bearer; Wire, Wood and Metal Lather Applicator

GROUP 2: Millwright, machine erector

GROUP 3: Piledriver - includes driving, pulling, cutting, placing collars, setting, welding, or creosote treated material, on all piling

GROUP 4: Bridge, dock and wharf carpenters

GROUP 5: Divers

GROUP 6: Divers Tender

DEPTH PAYY FOR DIVERS:

Each foot over 50-100 feet	\$1.00
Each foot over 100-175 feet	2.25
Each foot over 175-250 feet	5.50

HAZMAT PROJECTS

Anyone working on a HAZMAT job (task), where HAZMAT certification is required, shall be compensated at a premium, in addition to the classification working in as follows:

LEVEL D + \$.25 per hour - This is the lowest level of protection. No respirator is used and skin protection is minimal.

LEVEL C + \$.50 per hour - This level uses an air purifying respirator or additional protective clothing.

LEVEL B + \$.75 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit".

LEVEL A +\$1.00 per hour - This level utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line.

CARP00030 06/01/2002

	Rates	Fringes
SOUTHWEST WASHINGTON: CLARK, COWLITZ, KCLICKITAT, LEWIS(Piledriver only), PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the Pacific Ocean), SKAMANIA AND WAHAKIUM COUNTIES and INCLUDES THE ENTIRE PENINSULA WEST OF WILLAPA BAY		

SEE ZONE DESCRIPTION FOR CITIES BASE POINTS

ZONE 1:

CARPENTERS; ACOUSTICAL	27.37	8.80
DRYWALL	27.37	8.80
FLOOR LAYERS & FLOOR FINISHERS (the laying of all hardwood floors nailed and mastic set, parquet and wood-type tiles, and block floors,		

the sanding and finishing of floors,
the preparation of old and new
floors when the materials mentioned
above are to be installed); INSULATORS
(fiberglass and similar irritating

materials	27.52	8.80
MILLWRIGHTS	27.87	8.80
PILEDRIVERS	27.87	8.80
DIVERS	65.05	8.80
DIVERS TENDERS	29.91	8.80

DEPTH PAY

50 TO 100 FEET	\$1.00 PER FOOT OVER 50 FEET
100 TO 150 FEET	1.50 PER FOOT OVER 100 FEET
150 TO 200 FEET	2.00 PER FOOT OVER 150 FEET

Zone Differential (Add up Zone 1 rates):

Zone 2 - \$0.85
Zone 3 - 1.25

Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: ASTORIA, LONGVIEW, PORTLAND, THE DALLES,
AND VANCOUVER, (NOTE: All dispatches for Washington State
Counties: Cowlitz, Wahkiakum and Pacific shall be from Longview
Local #1707 and mileage shall be computed from that point.)

ZONE 1: Projects located within 30 miles of the respective
city hall of the above mentioned cities
ZONE 2: Projects located more than 30 miles and less than 40
miles of the respective city of the above mentioned
cities
ZONE 3: Projects located more than 40 miles and less than 50
miles of the respective city of the above mentioned
cities
ZONE 4: Projects located more than 50 miles and less than 60
miles of the respective city of the above mentioned
cities.
ZONE 5: Projects located more than 60 miles and less than 70
miles of the respective city of the above mentioned
cities
ZONE 6: Projects located more than 70 miles of the respected
city of the above mentioned cities

CARP0770D 06/01/2002

	Rates	Fringes
WESTERN WASHINGTON: CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS (excludes piledrivers only), MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES		

CARPENTERS AND DRYWALL APPLICATORS	27.95	8.05
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CARPENTERS ON CREOSOTE MATERIAL	28.05	8.05
INSULATION APPLICATORS	25.50	8.05
SAWFILERS, STATIONARY POWER SAW OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLER, FLOOR SANDER OPERATOR AND OPERATORS OF OTHER STATIONARY WOOD WORKING TOOLS	28.08	8.05
MILLWRIGHT AND MACHINE ERECTORS	28.95	8.05
ACOUSTICAL WORKERS	28.11	8.05
PILEDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CREOSOTE TREATED MATERIAL, ALL PILING	28.15	8.05
PILEDRIVER, BRIDGE, DOCK & WHARF CARPENTERS	27.95	8.05
DIVERS	68.97	8.05
DIVERS TENDER	30.68	8.05

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL

CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDRIVERS

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay	
0 -25 radius miles	Free
25-35 radius miles	\$1.00/hour
35-45 radius miles	\$1.15/hour
45-55 radius miles	\$1.35/hour
Over 55 radius miles	\$1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay	
0 -25 radius miles	Free
25-45 radius miles	\$.70/hour
Over 45 radius miles	\$1.50/hour

CENTRAL WASHINGTON: CHELAN, DOUGLAS (WEST OF THE 120TH MERIDIAN), KITTITAS, OKANOGAN (WEST OF THE 120TH MERIDIAN) AND YAKIMA COUNTIES

CARPENTERS AND DRYWALL APPLICATORS	20.72	7.82
CARPENTERS ON CREOSOTED MATERIAL	20.82	7.82

INSULATION APPLICATORS	20.72	7.82
SAWFILERS, STATIONARY POWER S37 OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLERS, FLOOR SANDER OPERATORS	20.85	7.82
MILLWRIGHT AND MACHINE ERECTORS	28.95	7.82
PILEDRIIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	28.15	7.82
PILEDRIIVER, BRIDGE DOCK AND WHARF CARPENTERS	27.95	7.82
DIVERS	68.97	8.05
DIVERS TENDER	30.68	8.05

ELEC0046A 12/30/2002		
	Rates	Fringes
CALLAM, JEFFERSON, KING AND KITSAP COUNTIES		
ELECTRICIANS	34.25	3%+9.55
CABLE SPLICERS	37.68	3%+9.55

ELEC0048C 01/01/2003		
	Rates	Fringes
CLARK, KLINKITAT AND SKAMANIA COUNTIES		
ELECTRICIANS	31.00	3%+11.83
CABLE SPLICERS	31.25	3%+11.83

ELEC0073A 01/01/2003		
	Rates	Fringes
ADAMS, FERRY, LINCOLN, PEND OREILLE, SPOKANE, STEVENS, WHITMAN COUNTIES		
ELECTRICIANS	24.07	3%+10.63
CABLE SPLICERS	24.47	3%+10.63

ELEC0076B 07/01/2002		
	Rates	Fringes
GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, AND THURSTON COUNTIES		
ELECTRICIANS	29.78	3%+11.01
CABLE SPLICERS	32.76	3%+11.01

ELEC0077C 02/01/2003		
	Rates	Fringes
LINE CONSTRUCTION:		
CABLE SPLICERS	37.95	3.875%+7.45
LINEMEN, POLE SPRAYERS, HEAVY LINE EQUIPMENT MAN	33.88	3.875%+7.45
LINE EQUIPMENT MEN	29.14	3.875%+5.70

POWDERMEN, JACKHAMMERMEN	25.41	3.875%+5.70
GROUNDMEN	23.72	3.875%+5.70
TREE TRIMMER	23.81	3.875%+5.70

ELEC0112E 06/01/2002

	Rates	Fringes
ASOTIN, BENTON, COLUMBIA, FRANKLIN, GARFIELD, KITTITAS, WALLA WALLA, YAKIMA COUNTIES		

ELECTRICIANS	28.75	3%+9.63
CABLE SPLICERS	30.19	3%+9.63

ELEC0191C 08/31/2002

	Rates	Fringes
ISLAND, SAN JUAN, SNOHOMISH, SKAGIT AND WHATCOM COUNTIES		

ELECTRICIANS	30.66	3%+9.33
CABLE SPLICERS	33.72	3%+9.33

ELEC0191D 12/01/2002

	Rates	Fringes
CHELAN, DOUGLAS, GRANT AND OKANOGAN COUNTIES		

ELECTRICIANS	26.66	3%+9.28
CABLE SPLICERS	29.33	3%+9.28

ELEC0970A 01/01/2003

	Rates	Fringes
COWLITZ AND WAHKIAKUM COUNTIES		

ELECTRICIANS	28.55	3%+9.25
CABLE SPLICERS	31.41	3%+9.25

ENGI0302E 06/01/2002

	Rates	Fringes
CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, DOUGLAS (WEST OF THE 120TH MERIDIAN), GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, KITTITAS, MASON, OKANOGAN (WEST OF THE 120TH MERIDIAN), SAN JUAN, SKAGIT, SNOHOMISH, WHATCOM AND YAKIMA (WEST OF THE 120TH MERIDIAN) COUNTIES		

PROJECTS

CATEGORY A PROJECTS (excludes Category B projects, as show
below)

POWER EQUIPMENT OPERATORS:

Zone 1 (0-25 radius miles):

GROUP 1AAA	31.14	8.40
GROUP 1AA	30.64	8.40
GROUP 1A	30.14	8.40
GROUP 1	29.64	8.40
GROUP 2	29.20	8.40

GROUP 3	28.84	8.40
GROUP 4	26.74	8.40

Zone 2 (26-45 radius miles) - Add \$.70 to Zone 1 rates
 Zone 3 (Over 45 radius miles) - Add \$1.00 to Zone 1 rates

BASEPOINTS: Bellingham, Mount Vernon, Kent, Port Angeles, Port Townsend, Aberdeen, Shelton, Bremerton, Wenatchee, Yakima, Seattle, Everett

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons or 300 ft. of boom (including job with attachments)

GROUP 1AA - Cranes - 200 tons to 300 tons or 250 ft. of boom (including jib and attachments); Tower crane over 175 ft. in height, base to boom

GROUP 1A - Cranes - 100 tons thru 199 tons or 150' of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft. in height base to boom; Loader-overhead, 8 yards and over; Shovel, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes-45 tons thru 99 tons, under 150 ft. of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Shovel, excavator, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader-overhead, 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, d-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled-45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Barch Plant opeator-concrete; Bump cutter; Cranes-20 tons thru 44 tons with attachments; Cranes-overheads, bridge type-20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel backhoe-3 yards and under; Finishing machine Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders, overhead under 6 yds.; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Pildriver (other than crane mount); Roto-mill, roto-grinder; Screedman, Spreader, Topside Operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self-propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrader trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blow knox, roadtec; Truck crane oiler/driver-100 tons and over; Truck mount portable conveyor;Yo Yo Pay Dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments;

Cranes-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers D9 and under; Forklifts-3000 lbs and over with attachments; horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strao tower bucket elevators; Hydralifts/boom truck-over 10 tons; Loader-elevating type belt; Motor Patrol Grader-non-finishing; Plant Oiler-asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrapers-concrete and carryall; Service engineers-equipment; Trenching machines; Truck crane oiler/driver-under 100 tons Tractors, backhoes-under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes-A-frame-10 tons and under; Elevator and manlift-permanent and shaft type; Forklifts-under 3000 lbs. with attachments; Gradechecker, stakeop; Hydralifts, boom trucks-10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Post Hole Digger-mechanical; Power

Plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shot crete/gunite equipment operator

CATEGORY B PROJECTS - 95% of the basic hourly rate for each group plus full fringe benefits applicable to Category A projects shall apply to the following projects. Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and structures whose total value is less than \$1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than \$1 million where no building is involved. Surfacing and paving included, but utilities excluded.
3. Marine projects (docks, wharfs, etc.) less than \$150,000.

WORK PERFORMED ON HYDRAULIC DREDGES:

Total Project Cost \$300,000 and over

GROUP 1	28.38	8.40
GROUP 2	28.48	8.40
GROUP 3	28.82	8.40
GROUP 4	28.87	8.40
GROUP 5	30.26	8.40
GROUP 6	28.38	8.40

GROUP 1: Assistant Mate (Deckhand)

GROUP 2: Oiler

GROUP 3: Assistant Engineer (Electric, Diesel, Steam or Booster Pump); Mates and Boatmen

GROUP 4: Craneman, Engineer Welder

GROUP 5: Leverman, Hydraulic

GROUP 6: Maintenance

Total Project cost under \$300,000

GROUP 1	26.96	8.40
GROUP 2	27.06	8.40
GROUP 3	27.38	8.40
GROUP 4	27.43	8.40

GROUP 5	28.75	8.40
GROUP 6	26.96	8.40

GROUP 1: Assistant Mate (Deckhand)
 GROUP 2: Oiler
 GROUP 3: Assistant Engineer (Electric, Diesel, Steam,
 or Booster Pump); Mates and Boatmen
 GROUP 4: Craneman, Engineer Welder
 GROUP 5: Leverman, Hydraulic
 GROUP 6: Maintenance

HEAVY WAGE RATES (CATEGORY A) APPLIES TO CLAM SHELL DREDGE, HOE
 AND DIPPER, SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND
 BULLDOZERS.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft
 classifications subject to working inside a federally designated
 hazardous perimeter shall be eligible for compensation in

accordance with the following group schedule relative to the
 level of hazardous waste as outlined in the specific hazardous
 waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not
 outfitted with protective clothing
 H-2 Class "C" Suit - Base wage rate plus \$.25 per hour.
 H-3 Class "B" Suit - Base wage rate plus \$.50 per hour.
 H-4 Class "A" Suit - Base wage rate plus \$.75 per hour.

 ENGI0370C 06/01/2002

	Rates	Fringes
ADAMS, ASOTIN, BENTON, CHELAN (EAST OF THE 120TH MERIDIAN), COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN (EAST OF THE 120TH MERIDIAN), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA (EAST OF THE 120TH MERIDIAN) COUNTIES		

ZONE 1:

POWER EQUIPMENT OPERATORS:

GROUP 1A	20.94	6.52
GROUP 1	21.49	6.52
GROUP 2	21.81	6.52
GROUP 3	22.42	6.52
GROUP 4	22.58	6.52
GROUP 5	22.74	6.52
GROUP 6	23.02	6.52
GROUP 7	23.29	6.52
GROUP 8	24.39	6.52

ZONE DIFFERENTIAL (Add to Zone 1
 rate): Zone 2 - \$2.00

Zone 1: Within 45 mile radius of Spokane, Moses Lake, Pasco,
 Washington; Lewiston, Idaho

Zone 2: Outside 45 mile radius of Spokane, Moses Lake, Pasco,
 Washington; Lewiston, Idaho

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1A: Boat Operator; Crush Feeder; Oiler; Steam Cleaner

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Drillers Helper (Assist driller in making drill rod connections, service drill engine and air compressor, repair drill rig and drill tools, drive drill support truck to and on the job site, remove drill cuttings from around bore hole and inspect drill rig while in operation); Fireman & Heater Tender; Grade Checker; Hydro-seeder, Mulcher, Nozzlemans; Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog; Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber Stacker, hydra-lift & similar; Gin Trucks (pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled); Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat; Boring Machine (earth); Boring Machine (rock under 8" bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginaw or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumora, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Tractor (to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pump-crete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond)(operate

drilling machine, drive or transport drill rig to and on job site and weld well casing); Equipment Serviceman; Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Plant Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8" bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe & Hoe Ram (under 3/4 yd.); Carrydeck & Boom Truck (under 25 tons); Cranes (25 tons & under), all attachments including clamshell, dragline; Derricks & Stifflegs (under 65 tons); Drilling Equipment(8" bit & over) (Robbins, reverse circulation & similar)(operates drilling machine, drive or transport drill rig to and on job site and weld well casing); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operaotr (self-propelled);

Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar)

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers)(Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (motor patrol & attachments, Athey & Huber); Boom Cats (side); Cable Controller (dispatcher); Clamshell Operator (under 3 yds.); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver; Cranes (over 25 tons, to and including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Draglines (under 3 yds.); Drill Doctor; H.D. Mechanic; H.D. Welder; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.); Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Rollerman (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all, rubber-tired; Screed Operator; Shovel(under 3 yds.); Tractors (D-6 & equivalent & over); Trenching Machines (7 ft. depth & over); Tug Boat Operator Vactor guzzler, super sucker

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds & over); Blade (finish & bluetop) Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Concrete Cleaning/Decontamination machine operator; Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragline; Derricks & Stiffleys (65 tons & over); Elevating Belt (Holland type); Heavy equipment robotics operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Whirleys & Hammerheads, ALL

GROUP 8: Cranes (85 tons and over, and all climbing, overhead,rail and tower), all attachments including clamshell, dragline; Loaders (overhead and front-end, 10 yards and over);

Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower)

180' to 250' \$.30 over scale

Over 250' \$.60 over scale

NOTE: In computing the length of the boom on Tower Cranes, they shall be measured from the base of the Tower to the point of the boom.

HAZMAT: Anyone working on HAZMAT jobs, working with supplied air shall receive \$1.00 an hour above classification.

ENGI0370G 06/01/2002

Rates Fringes
ADAMS, ASOTIN, BENTON, CHELAN (EAST OF THE 120TH MERIDIAN),

COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN (EAST OF THE 120TH MERIDIAN), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA (EAST OF THE 120TH MERIDIAN) COUNTIES

WORK PERFORMED ON HYDRAULIC DREDGES

GROUP 1:	24.73	6.27
GROUP 2:	25.10	6.27
GROUP 3:	25.13	6.27
GROUP 4:	25.52	6.27
GROUP 5:	24.73	6.27

GROUP 1: Assistant Mate (Deckhand) and Oiler
GROUP 2: Assistant Engineer (Electric, Diesel, Steam, or Booster Pump); Mates and Boatmen
GROUP 3: Engineer Welder
GROUP 4: Leverman, Hydraulic
GROUP 5: Maintenance

HEAVY WAGE RATES APPLIES TO CLAM SHELL DREDGE, HOE AND DIPPER, SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND BULLDOZERS.

ENGI0612A 06/01/2002

Rates Fringes
LEWIS, PIERCE, PACIFIC (THAT PORTION WHICH LIES NORTH OF A PARALLEL LINE EXTENDED WEST FROM THE NORTHERN BOUNDARY OF WAHKAUKUM COUNTY TO THE SEA IN THE STATE OF WASHINGTON) AND THURSTON COUNTIES

PROJECTS:

CATEGORY A PROJECTS (excludes Category B projects, as shown below)

POWER EQUIPMENT OPERATORS:

ZONE 1 (0-25 radius miles):

GROUP 1AAA	31.14	8.40
GROUP 1AA	30.64	8.40
GROUP 1A	30.14	8.40

GROUP 1	29.64	8.40
GROUP 2	29.20	8.40
GROUP 3	28.94	8.40
GROUP 4	26.74	8.40

ZONE 2 (26-45 radius miles) - Add \$.70 to Zone 1 rates

ZONE 3 (Over 45 radius miles) - Add \$1.00 to Zone 1 rates

BASEPOINTS: Tacoma, Olympia, and Centralia

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-300 tons, or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes 200 tons to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Crane 100 tons thru 199 tons, or 150 of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Shovel, excavator, backhoes-6 yds and over with attachments

GROUP 1 - Cableways; Cranes-45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type - 45 tons thru 99 tons; Excavator, shovel, backhoes over 3 yards and under 6 yards; hard tail end dump articulating off-road equipment 45 yards and over; loader-overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled-45 yds and over; Slipform pavers; Transporters-all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump cutter; Cranes-20 tons through 44 tons with attachments; Crane-overhead, bridge type-20 tons thru 44 tons; Chipper, Concrete Pump-truck mounted with boom attachment; Crushers; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel, backhoe-3yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders, overhead under 6 yds.; Loaders, plant feed; Locomotive-all; Mechanics-all; Mixers, asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill, roto grinder; screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment under 45 yds.; Subgrader trimmer; Tractors, backhoes over 75 hp.; Transfer material service machine-shuttle buggy, Blaw Knox-Roadtec; Truck Crane Oiler/driver-100 tons and over, Truck Mount Portable Conveyor; Yo Yo Pay dozer.

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; Cranes-A-frame over 10 tons; Drill Oilers-Auger type, truck or

crane mount; Dozers-D-9 and under; Forklifts-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/Boom Trucks-over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant Oiler-Asphalt, Crusher; Pumps, Concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrapers-Concrete and Carry all; Trenching machines; Truck Crane Oiler/Driver-under 100 tons; Tractor, backhoe-under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Crane-A-Frame, 10 tons and under; Elevator and manlift-permanent and shaft type; Forklifts-under 3000 lbs. with attachments; Gradechecker, stakeop; Hydralifts, boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole Digger-mechanical; Power plant;

Pumps-Water; Roller-other than Plant Mix; Wheel Tractors, Farmall type; Shotcrete/Gunite Equipment Operator

CATEGORY B PROJECTS - 95% of the basic hourly rate for each group plus full fringe benefits applicable to Category A projects shall apply to the following projects: Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and structures whose total value is less than \$1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than \$1 million where no building is involved. Surfacing and paving included, but utilities excluded.
3. Marine projects (docks, wharfs, etc.) less than \$150,000

WORK PERFORMED ON HYDRAULIC DREDGES:

Total Project cost \$300,000 and over

GROUP 1	28.38	8.40
GROUP 2	28.48	8.40
GROUP 3	28.82	8.40
GROUP 4	28.87	8.40
GROUP 5	30.26	8.40
GROUP 6	28.38	8.40

GROUP 1: Assistant Mate (Deckhand)

GROUP 2: Oiler

GROUP 3: Assistant Engineer (Electric, Diesel, Steam or Booster Pump); Mates and Boatmen

GROUP 4: Craneman, Engineer Welder

GROUP 5: Leverman, Hydraulic

GROUP 6: Maintenance

Total Project Cost under \$300,000

GROUP 1	26.96	8.40
GROUP 2	27.06	8.40
GROUP 3	27.38	8.40
GROUP 4	27.43	8.40
GROUP 5	28.75	8.40
GROUP 6	26.96	8.40

GROUP 1: Assistant Mate (Deckhand)
 GROUP 2: Oiler
 GROUP 3: Assistant Engineer (Electric, Diesel, Steam or
 Booster Pump); Mates and Boatmen
 GROUP 4: Craneman, Engineer Welder
 GROUP 5: Leverman, Hydraulic
 GROUP 6: Maintenance

HEAVY WAGE RATES APPLIES TO CLAM SHEEL DREDGE, HOE AND DIPPER,
 SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND BULLDOZERS

HANDLING OF HAZARDOUS WASTE MATERIALS

H-1 - When not outfitted with protective clothing of
 level D equipment - Base wage rate
 H-2 - Class "C" Suit - Base wage rate + \$.25 per hour
 H-3 - Class "B" Suit - Base wage rate + \$.50 per hour
 H-4 - Class "A" Suit - Base wage rate +\$.75 per hour

 ENGI0701D 01/01/2003

	Rates	Fringes
CLARK, COWLITZ, KLIKKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHIAKUM COUNTIES		

POWER EQUIPMENT OPERATORS (See Footnote A)

ZONE 1:

GROUP 1	29.30	8.95
GROUP 1A	30.77	8.95
GROUP 1B	32.23	8.95
GROUP 2	28.07	8.95
GROUP 3	27.31	8.95
GROUP 4	26.79	8.95
GROUP 5	26.19	8.95
GROUP 6	23.84	8.95

Zone Differential (add to Zone 1 rates):

Zone 2 - \$1.50

Zone 3 - 3.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS;
 MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK; AND COWLITZ
 COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion
 Counties, West of the western boundary of Mt. Hood National
 Forest and West of Mile Post 30 on Interstate 84 and West of Mile
 Post 30 on State Highway 26 and West of Mile Post 30 on Highway
 22 and all jobs or projects located in Yamhill County, Washington
 County and Columbia County and all jobs or projects located in
 Clark & Cowlitz County, Washington except that portion of Cowlitz
 County in the Mt. St. Helens "Blast Zone" shall receive Zone I
 pay for all classifications.

All jobs or projects located in the area outside the identified

boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three units or more; CRANE: Helicopter Operator, when used in erecting work; Whirley Operator, 90 ton and over; LATTICE BOOM CRANE: Operator 200 tons through 299 tons, and/or over 200 feet boom; HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199 tons with luffing or tower attachments; FLOATING EQUIPMENT: Floating Crane, 150 ton but less than 250 ton

GROUP 1A: HYDRAULIC CRANE: Hydraulic Operator, 200 tons and over (with luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200 tons through 299 tons, with over 200 feet boom; FLOATING EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons with over 200 feet boom; Operator 400 tons and over; FLOATING EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill, pavement profiler, operator, 6 foot lateral cut and over; BLADE: Auto Grader or "Trimmer" (Grade Checker required); Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over 120,000 lbs and above; Bulldozer operator, twin engine; Bulldozer Operator, tandem, quadnine, D10, D11, and similar type; Bulldozere Robotic Equipment (any type); CONCRETE: Batch Plant and/or Wet Mix Operator, one and two drum; Automatic Concrete Slip Form Paver Operator; Concrete Canal Line Operator; Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25 tons and over; HYDRAULIC CRANE: Hydraulic crane operator 90 tons through 199 tons (with luffing or tower attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator; Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through 199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher

Plant Operator; FLOATING EQUIPMENT: Floating Clamshell, etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons; LOADERS: Loader operator, 120,000 lbs. and above; REMOTE CONTROL: Remote controlled earth-moving equipment; RUBBER-TIRED SCRAPERS: Rubber-tired scraper operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell, operator 5 cu. yds and over; TRENCHING MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler required); Wheel Excavator, over 750 cu. yds. per hour; Band Wagon (in conjunction with wheel excavator); UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote or otherwise; HYDRAULIC HOES-EXCAVATOR: Excavator over 130,000 lbs.

GROUP 3: BULLDOZERS: Bulldozer operator, over 70,000 lbs. up to and including 120,000 lbs.; HYDRAULIC CRANE: Hydraulic crane operator, 50 tons through 89 tons (with luffing or tower attachment); LATTICE BOOM CRANES: Lattice Boom Crane-50 through 89 tons (and less than 150 feet boom); FORKLIFT: Rock Hound Operator; HYDRAULIC HOES-EXCAVATOR: excavator over 80,000 lbs. through 130,000 lbs.; LOADERS: Loader operator 60,000 and less than 120,000; RUBBER-TIRED SCRAPERS: Scraper Operator, with tandem scrapers; Self-loading, paddle wheel, auger type, finish and/or 2 or more units; SHOVEL, DRAGLINE, CLAMSHELL,SKOOPER OPERATOR: Shovel, Dragline, Clamshell operators 3 cu. yds. but less than 5 cu yds.

GROUP 4: ASPHALT: Screed Operator; Asphalt Paver operator (screeman required); BLADE: Blade operator; Blade operator, finish; Blade operator, externally controlled by electronic, mechanical hydraulic means; Blade operator, multi-engine; BULLDOZERS: Bulldozer Operator over 20,000 lbs and more than 100 horse up to 70,000 lbs; Drill Cat Operator; Side-boom Operator; Cable-Plow Operator (any type); CLEARING: Log Skidders; Chippers; Incinerator; Stump Splitter (loader mounted or similar type); Stump Grinder (loader mounted or similar type; Tub Grinder; Land Clearing Machine (Track mounted forestry mowing & grinding machine); Hydro Axe (loader mounted or similar type); COMPACTORS SELF-PROPELLED: Compactor Operator, with blade; Compactor Operator, multi-engine; Compactor Operator, robotic; CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete Cooling Machine Operator; Concrete Paving Road Mixer; Concrete Breaker; Reinforced Tank Banding Machine (K-17 or similar types); Laser Screed; CRANE: Chicago boom and similar types; Lift Slab Machine Operator; Boom type lifting device, 5 ton capacity or less; Hoist Operator, two (2) drum; Hoist Operator, three (3) or more drums; Derrick Operator, under 100 ton; Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over; Cableway Operator up to twenty (25) ton; Bridge Crane Operator, Locomotive, Gantry, Overhead; Cherry Picker or similar type crane; Carry Deck Operator; Hydraulic Crane Operator, under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom Crane Operator, under 50 tons; CRUSHER: Generator Operator; Diesel-Electric Engineer; Grizzley Operator; Drill Doctor; Boring Machine Operator; Driller-Percussion, Diamond, Core, Cable, Rotary and

similar type; Cat Drill (John Henry); Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Diesel-electric Engineer; Jack Operator, elevating barges, Barge Operator, self-unloading; Piledriver Operator (not crane type) (Deckhand required); Floating Clamshell, etc. Operator, under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type up to and including 20,000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less

than 60,000 lbs; Elevating Grader Operator by Tractor operator, Sierra, Euclid or similar types; PILEDRIVERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning Decontamination Machine Operator; Ultra High Pressure Water Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Floating); Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; Machine Tool Operator; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push-ull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Diesel Electric Engineer; Stationary Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cu yds.; Grade-all Operator; SURFACE (BASE) MATERIAL: Blade mounted spreaders, Ulrich and similar types; TRACTOR-RUBBERED TIRED: Tractor operator, rubber-tired, over 50 hp flywheel; Tractor operator, with boom attachment; Rubber-tired dozers and pushers (Michigan, Cat, Hough type); Skip Loader, Drag Box; TRENCHING MACHINE: Trenching Machine operator, digging capacity over 3 ft depth; Back filling machine operator; TUNNEL: Mucking machine operator

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type); Roto-Mill, pavement profiler, ground man; BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less; COMPRESSORS: Compressor Operator (any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Belcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and similar; Concrete Pump Operator;

Grouting Machine Operator; Concrete mixer operator, single drum, under (5) bag capacity; Cast in place pipe laying machine; maginnis Internal Full slab vibrator operator; Concrete finishing mahine operator, Clary, Johnson, Bidwell, Burgess Bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms in tunnels; Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churm Drill and Earth Boring Machine Operator; Vacuum Truck; Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT:

Fireman; FORKLIFT: Fork Lift, over 10 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type); Hydraulic Backhoe Operator track type up to and including 20,000 lbs.; LOADERS: Loaders, rubber-tired type, less than 25,000 lbs; Elevating Grader Operator, Tractor Towed requiring Operator or Grader; Elevating loader operator, Athey and similar types; OILERS: Service oiler (Greaser); PIPELINE-SEWER WATER: Hydra hammer or simialr types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over; MATERIAL HAULRS: Cat wagon DJB's Volvo similar types; Conveyored material hauler; SURFACING (BASE) MATERIAL: Rock Spreaders, self-propelled; Pulva-mixer or similar types; Chiip Spreading machine operator; Lime spreading operator, construction job siter; SWEEPERS: Sweeper operator (Wayne type) self-propelled construction job site; TRACTOR-RUBBER TIERED: Tractor operator, rubber-tired, 50 hp flywheel and under; Trenching machine operator, maximum digging capacity 3 ft depth; TUNNEL: Dinkey GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feeder; CRUSHER: Crusher oiler; Crusher feeder; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT: Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (exclduing working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; Lull Hi-Lift Operator or Similar Type; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS:

Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler-Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; Rigger; PIPELINE-SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman; Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman; SWEEPER: Broom operator, self propelled, construction job site; SURFACING (BASE) MATERIAL: Roller Operator, grading of base rock (not asphalt); Tamping Machine operator, mechanical, self-propelled; Hydrographic Seeder Machine Operator; TRENCHING MACHINE: Oiler; Grade Oiler; TUNNEL: Conveyor operator; Air filtration equipment operator

ENGI0701E 06/01/2002

CLARK, COWLITZ, KLUCKITAT, PACIFIC (SOUTH), SKAMANIA,
AND WAHIAKUM COUNTIES

DREDGING:

	Rates	Fringes
ZONE A		
LEVERMAN, HYDRAULIC	32.43	8.50
LEVERMAN, DIPPER, FLOATING CLAMSHELL	30.25	8.50
ASSISTANT ENGINEER	29.25	8.50
TENDERMAN	28.44	8.50
ASSISTANT MATE	26.58	8.50
ZONE B		
LEVERMAN, HYDRAULIC	34.43	8.50
LEVERMAN, DIPPER, FLOATING CLAMSHELL	32.25	8.50
ASSISTANT ENGINEER	31.25	8.50
TENDERMAN	30.44	8.50
ASSISTANT MATE	28.58	8.50
ZONE C		
LEVERMAN, HYDRAULIC	35.43	8.50
LEVERMAN, DIPPER, FLOATING CLAMSHELL	33.25	8.50
ASSISTANT ENGINEER	32.25	8.50
TENDERMAN	31.44	8.50
ASSISTANT MATE	29.58	8.50

ZONE DESCRIPTION FOR DREDGING:

ZONE A - All jobs or projects located within 30 road miles of Portland City Hall.

ZONE B - Over 30-50 road miles from Portland City Hall.

ZONE C - Over 50 road miles from Portland City Hall.

*All jobs or projects shall be computed from the city hall by the shortest route to the geographical center of the project.

IRON0014F 02/01/2003

	Rates	Fringes
ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND ORIELLE, SPOKANE, STEVENS, WALLA WALLA AND WHITMAN COUNTIES		

IRONWORKERS	25.52	11.80
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IRON0029I 07/01/2002

	Rates	Fringes
CLARK, COWLITZ, KLINKITAT, PACIFIC, SKAMANIA, AND WAHKAUKUM COUNTIES		

IRONWORKERS	26.97	11.80
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IRON0086B 07/01/2002

	Rates	Fringes
YAKIMA, KITTITAS AND CHELAN COUNTIES		

IRONWORKERS	26.72	11.80
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IRON0086E 07/01/2002

	Rates	Fringes
CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SKAGIT, SNOHOMISH, THURSTON, AND WHATCOM COUNTIES		

IRONWORKERS	27.22	11.80
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LAB00001D 06/01/2002

	Rates	Fringes
CHELAN, DOUGLAS (WEST OF THE 120TH MERIDIAN), KITTITAS AND YAKIMA COUNTIES		

LABORERS:

ZONE 1:

GROUP 1	14.79	6.20
GROUP 2	17.11	6.20
GROUP 3	18.83	6.20
GROUP 4	19.31	6.20
GROUP 5	19.67	6.20

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):

ZONE 2 - \$.70

ZONE 3 - \$1.00

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE,
AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city
hall

ZONE 2 - More than 25 but less than 45 radius miles from the

respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

CALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS,
MASON, PACIFIC (NORTH OF STRAIGHT LINE MADE BY EXTENDING THE
NORTH BOUNDARY WAHIAKUM COUNTY WEST TO THE PACIFIC OCEAN),
PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM
COUNTIES

LABORERS:

ZONE 1:

GROUP 1	17.71	6.20
GROUP 2	20.03	6.20
GROUP 3	24.71	6.20
GROUP 4	25.19	6.20
GROUP 5	25.55	6.20

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):

ZONE 2 - \$.70

ZONE 3 - \$1.00

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT,
SEATTLE, KENT, TACOMA, OLYMPIA,
CENTRALIA, ABERDEEN, SHELTON, PT.
TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city
hall

ZONE 2 - More than 25 but less than 45 radius miles from the
respective city hall

ZONE 3 - More than 45 radius miles from the respective city hall

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window
Washer/Cleaner (detail clean-up, such as but not limited to
cleaning floors, ceilings, walls, windows, etc., prior to final
acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer;
Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating
Screed; Asbestos Abatement Laborer; Ballast Regulator Machine;
Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement
Finisher Tender; Change House or Dry Shack; Chipping Gun (under
30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete
Form Stripper; Curing Laborer; Demolition (wrecking and moving
including charred material); Ditch Digger; Dump Person; Fine
Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout
Machine Tender; Grinders; Guardrail Erector; Hazardous Waste
Worker (Level C); Maintenance Person; Material Yard Person; Pot
Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer;
Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job
site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Mortarman and Hodcarrier; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20'); Spreader

(concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Powderman; Re-Timberman; Hazardous Waste Worker (Level A).

LAB00238E 06/01/2002

	Rates	Fringes
ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA AND WHITMAN COUNTIES		

LABORERS:

ZONE 1:

GROUP 1	17.66	5.50
GROUP 2	19.76	5.50
GROUP 3	20.03	5.50
GROUP 4	20.30	5.50
GROUP 5	20.58	5.50
GROUP 6	21.95	5.50

Zone Differential (Add to Zone 1 rate): \$2.00

BASE POINTS: Spokane, Moses Lake, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.

Zone 2: 45 radius miles and over from the main post office.

LABORERS CLASSIFICATIONS

GROUP 1: Flagman; Landscape Laborer; Scaleman; Traffic Control Maintenance Laborer (to include erection and maintenance of barricades, signs and relief of flagperson); Window Washer/Cleaner (detail cleanup, such as, but not limited to cleaning floors, ceilings, walls, windows, etc. prior to final acceptance by the owner)

GROUP 2: Asbestos Abatement Worker; Brush Hog Feeder; Carpenter Tender; Cement Handler; Clean-up Laborer; Concrete Crewman (to

include stripping of forms, hand operating jacks on slip form construction, application of concrete curing compounds, pumpcrete machine, signaling, handling the nozzle of squeezecrete or similar machine, 6 inches and smaller); Confined Space Attendant; Concrete Signalman; Crusher Feeder; Demolition (to include clean-up, burning, loading, wrecking and salvage of all material); Dumpman; Fence Erector; Firewatch; Form Cleaning Machine Feeder, Stacker; General Laborer; Grout Machine Header Tender; Guard Rail (to include guard rails, guide and reference posts, sign posts, and right-of-way markers); Hazardous Waste Worker, Level D (no respirator is used and skin protection is minimal); Miner, Class "A" (to include all bull gang, concrete crewman, dumpman and pumpcrete crewman, including distributing pipe, assembly &

dismantle, and nipper); Nipper; Riprap Man; Sandblast Tailhoesman; Scaffold Erector (wood or steel); Stake Jumper; Structural Mover (to include separating foundation, preparation, cribbing, shoring, jacking and unloading of structures); Tailhoesman (water nozzle); Timber Bucker and Faller (by hand); Track Laborer (RR); Truck Loader; Well-Point Man; All Other Work Classifications Not Specially Listed Shall Be Classified As General Laborer

GROUP 3: Asphalt Raker; Asphalt Roller, walking; Cement Finisher Tender; Concrete Saw, walking; Demolition Torch; Dope Pot Firemen, non-mechanical; Driller Tender (when required to move and position machine); Form Setter, Paving; Grade Checker using level; Hazardous Waste Worker, Level C (uses a chemical "splash suit" and air purifying respirator); Jackhammer Operator; Miner, Class "B" (to include brakeman, finisher, vibrator, form setter); Nozzleman (to include squeeze and flo-crete nozzle); Nozzleman, water, air or steam; Pavement Breaker (under 90 lbs.); Pipelayer, corrugated metal culvert; Pipelayer, multi-plate; Pot Tender; Power Buggy Operator; Power Tool Operator, gas, electric, pneumatic; Railroad Equipment, power driven, except dual mobile power spiker or puller; Railroad Power Spiker or Puller, dual mobile; Rodder and Spreader; Tamper (to include operation of Barco, Essex and similar tampers); Trencher, Shawnee; Tugger Operator; Wagon Drills; Water Pipe Liner; Wheelbarrow (power driven)

GROUP 4: Air and Hydraulic Track Drill; Brush Machine (to include horizontal construction joint cleanup brush machine, power propelled); Caisson Worker, free air; Chain Saw Operator and Faller; Concrete Stack (to include laborers when laborers working on free standing concrete stacks for smoke or fume control above 40 feet high); Guniting (to include operation of machine and nozzle); Hazardous Waste Worker, Level B (uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Laser Beam Operator (to include grade checker and elevation control); Miner, Class C (to include miner, nozzleman for concrete, laser beam operator and rigger on tunnels); Monitor Operator (air track or similar mounting); Mortar Mixer; Nozzleman (to include jet blasting nozzleman, over 1,200 lbs., jet blast machine power propelled, sandblast nozzle); Pavement Breaker (90 lbs. and over); Pipelayer (to include working topman, caulker,

collarman, jointer, mortarman, rigger, jacker, shorer, valve or meter installer); Pipewrapper; Plasterer Tender; Vibrators (all)

GROUP 5 - Drills with Dual Masts; Hazardous Waste Worker, Level A (utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line); Miner Class "D", (to include raise and shaft miner, laser beam operator on riases and shafts)

GROUP 6 - Powderman

LAB00238G 06/01/2002

	Rates	Fringes
COUNTIES EAST OF THE 120TH MERIDIAN: ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA, WHITMAN		

HOD CARRIERS	21.55	5.50
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LAB00335A 06/01/2002

	Rates	Fringes
CLARK, COWLITZ, KLUCKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE MADE BY EXTENDING THE NORTH BOUNDARY LINE OF WAHIAKUM COUNTY WEST TO THE PACIFIC OCEAN), SKAMANIA AND WAHIAKUM COUNTIES		

ZONE 1:

LABORERS:

GROUP 1	23.43	6.15
GROUP 2	23.94	6.15
GROUP 3	24.33	6.15
GROUP 4	24.66	6.15
GROUP 5	21.26	6.15
GROUP 6	19.16	6.15
GROUP 7	16.40	6.15

Zone Differential (Add to Zone 1 rates):

Zone 2 \$ 0.65

Zone 3 - 1.15

Zone 4 - 1.70

Zone 5 - 2.75

BASE POINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city all.

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.

ZONE 5: More than 80 miles from the respective city hall.

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing, Concrete; Demolition, Wrecking and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Guard Rail, Median Rail Reference Post, Guide Post, Right of Way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or Similar Types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor;

Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man-Crusher (aggregate when used)

GROUP 2: Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean-up Nozzelman-Green Cutter (concrete, rock, etc.); Concrete Power Buggyman; Concrete Laborer; Crusher Feeder; Demolition and Wrecking Charred Materials; Guniting Nozzelman Tender; Guniting or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Tool Operators (includes but not limited to: Dry Pack Machine; Jackhammer; Chipping Guns; Paving Breakers); Pipe Doping and Wrapping; Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (Wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bullgang (underground)

GROUP 3: Asbestos Removal; Bit Grinder; Drill Doctor; Drill Operators, air tracks, cat drills, wagon drills, rubber-mounted drills, and other similar types including at crusher plants; Guniting Nozzelman; High Scalars, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Concrete Saw Operator; Powdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (Dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks, Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timbermen; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (pipelaying)-applicable when employee assigned to move, set up, align; Laser Beam; Tunnel Miners; Motorman-Dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping or Planting Laborers

LAB00335L 06/01/2002

Rates Fringes
CLARK, COWLITZ, KLUICKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE MADE
BY EXTENDING THE NORTH BOUNDARY LINE OF WAHIAKUM COUNTY WEST TO
THE PACIFIC OCEAN), SKAMANIA AND WAHIAKUM COUNTIES

HOD CARRIERS 25.04 6.15

PAIN0005B 06/01/2002

Rates Fringes
STATEWIDE EXCEPT CLARK, COWLITZ, KLUICKITAT, PACIFIC (SOUTH),
SKAMANIA, AND WAHIAKUM COUNTIES

STRIPERS 21.25 6.40

PAIN0005D 07/01/2002

Rates Fringes
CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS,
MASON, PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM
COUNTIES

PAINTERS 23.27 5.36

PAIN0005G 07/01/2002

Rates Fringes
ADAMS, ASOTIN; BENTON AND FRANKLIN (EXCEPT HANFORD SITE); CHELAN,
COLUMBIA, DOUGLAS, FERRY, GARFIELD, GRANT, KITTITAS, LINCOLN,
OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA,
WHITMAN AND YAKIMA COUNTIES

PAINTERS*:

Brush, Roller, Striping,		
Steam-cleaning and Spray	18.97	5.32
Application of Cold Tar		
Products, Epoxies, Polyure		
thanes, Acids, Radiation		
Resistant Material, Water and		
Sandblasting, Bridges, Towers,		
Tanks, Stacks, Steeples	19.97	5.32
TV Radio, Electrical Transmission		
Towers	20.72	5.32
Lead Abatement, Asbestos		
Abatement	19.97	5.32

*\$.70 shall be paid over and above the basic wage rates listed
for work on swing stages and high work of over 30 feet.

PAIN0055C 07/01/2002

Rates Fringes

CLARK, COWLITZ, KLUICKITAT, PACIFIC, SKAMANIA, AND WAHKKIAKUM
COUNTIES

PAINTERS:

Brush & Roller	17.35	5.08
Spray and Sandblasting	17.95	5.08
High work - All work		
60 ft. or higher	18.10	5.08

PAIN0055L 06/01/2002

	Rates	Fringes
CLARK, COWLITZ, KLUICKITAT, SKAMANIA and WAHKKIAKUM COUNTIES		

PAINTERS:

HIGHWAY AND PARKING LOT STRIPER	23.36	5.75
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PLAS0072E 06/01/2002

	Rates	Fringes
ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN, AND YAKIMA COUNTIES		

ZONE 1:

CEMENT MASONS	22.33	5.98
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Zone Differential (Add to Zone 1
rate): Zone 2 - \$2.00

BASE POINTS: Spokane, Pasco, Moses Lake, Lewiston

Zone 1: 0 - 45 radius miles from the main post office
Zone 2: Over 45 radius miles from the main post office

PLAS0528A 12/01/2002

	Rates	Fringes
CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (NORTH), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON, AND WHATCOM COUNTIES		

CEMENT MASON	28.05	9.84
COMPOSITION, COLOR MASTIC, TROWEL MACHINE, GRINDER, POWER TOOLS, GUNNITE NOZZLE	28.30	9.84

PLAS0555B 06/01/2002

	Rates	Fringes
CLARK, COWLITZ, KLUICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKKIAKUM COUNTIES		

ZONE 1:

CEMENT MASONS	24.24	9.70
COMPOSITION WORKERS AND POWER MACHINERY OPERATORS	24.68	9.70
CEMENT MASONS ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD	24.68	9.70
CEMENT MASONS DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD	25.13	9.70

Zone Differential (Add To Zone 1 Rates):

Zone 2 - \$0.65

Zone 3 - 1.15

Zone 4 - 1.70

Zone 5 - 2.75

BASE POINTS: BEND, CORVALLIS, EUGENE, LONGVIEW, MEDFORD,
PORTLAND, SALEM, THE DALLES, VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall

ZONE 2: More than 30 miles but less than 40 miles from the
respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the
respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the
respective city hall.

ZONE 5: More than 80 miles from the respective city hall

PLUM0032B 01/01/2003

	Rates	Fringes
CLALLAM, KING AND JEFFERSON COUNTIES		

PLUMBERS AND PIPEFITTERS	34.18	12.68
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PLUM0032D 06/01/2002

	Rates	Fringes
CHELAN, KITTITAS (NORTHERN TIP), DOUGLAS (NORTH), AND OKANOGAN (NORTH) COUNTIES		

PLUMBERS AND PIPEFITTERS	26.13	10.23
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PLUM0044C 06/01/2002

	Rates	Fringes
ADAMS (NORTHERN PART), ASOTIN (CLARKSTON ONLY), FERRY (EASTERN PART), LINCOLN (EASTERN PART), PEND ORIELLE, STEVENS, SPOKANE, AND WHITMAN COUNTIES		

PLUMBERS AND PIPEFITTERS	26.16	9.89
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PLUM0082A 08/01/2002

	Rates	Fringes
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CLARK (NORTHERN TIP INCLUDING WOODLAND), COWLITZ, GRAYS HARBOR,
LEWIS, MASON (EXCLUDING NE SECTION), PACIFIC, PIERCE
SKAMANIA, THURSTON AND WAHKIAKUM COUNTIES

PLUMBERS AND PIPEFITTERS	29.60	11.62
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PLUM0265C 08/01/2002

	Rates	Fringes
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ISLAND, SKAGIT, SNOHOMISH, SAN JUAN AND WHATCOM COUNTIES

PLUMBERS AND PIPEFITTERS	29.00	11.62
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PLUM0290K 10/01/2002

	Rates	Fringes
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CLARK (ALL EXCLUDING NORTHERN TIP INCLUDING CITY OF WOODLAND)

PLUMBERS AND PIPEFITTERS	31.73	12.93
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PLUM0598E 06/01/2002

	Rates	Fringes
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ADAMS (SOUTHERN PART), ASOTIN (EXCLUDING THE CITY OF CLARKSTON),
BENTON, COLUMBIA, DOUGLAS (EASTERN HALF), FERRY (WESTERN PART),
FRANKLIN, GARFIELD, GRANT, KITTITAS (ALL BUT NORTHERN TIP),
Klickitat, LINCOLN (WESTERN PART), OKANOGAN (EASTERN), WALLA
WALLA AND YAKIMA COUNTIES

PLUMBERS	29.85	12.59
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PLUM0631A 08/01/2002

	Rates	Fringes
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MASON (NE SECTION),
AND KITSAP COUNTIES

PLUMBERS/PIPEFITTERS:

All new construction, additions,
and remodeling of commercial
building projects such as:
cocktail lounges and taverns,
professional buildings, medical
clinics, retail stores, hotels
and motels, restaurants and fast
food types, gasoline service
stations, and car washes where
the plumbing and mechanical cost
of the project is less than
\$100,000

19.20	4.58
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All other work where the plumbing
and mechanical cost of the project
is \$100,000 and over

27.84	11.62
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TEAM0037C 06/01/2002

Rates Fringes
CLARK, COWLITZ, KLUCKITAT, PACIFIC (South of a straight line made
by extending the north boundary line of Wahkiakum County west to
the Pacific Ocean), SKAMANIA, AND WAHIAKUM COUNTIES

TRUCK DRIVERS

ZONE 1:

GROUP 1	23.65	8.45
GROUP 2	23.77	8.45
GROUP 3	23.90	8.45
GROUP 4	24.16	8.45
GROUP 5	24.38	8.45
GROUP 6	24.54	8.45
GROUP 7	24.74	8.45

Zone Differential (Add to Zone 1 Rates):

Zone 2 - \$0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: ASTORIA, THE DALLIES, LONGVIEW AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall.
ZONE 2: More than 30 miles but less than 40 miles from the
respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the
respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the
respective city hall.
ZONE 5: More than 80 miles from the respective city hall.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: A Frame or Hydra lift truck w/load bearing surface;
Articulated dump truck; Battery Rebuilders; Bus or Manhaul
Driver; Concrete Buggies (power operated); Concrete pump truck;
Dump Trucks, side, end and bottom dumps, including Semi Trucks
and Trains or combinations there of: up to and including 10 cu.
yds.; Lift Jitneys, Fork Lifts (all sizes in loading, unloading
and transporting material on job site); Loader and/or Leverman on
Concrete Dry Batch Plant (manually operated); Pilot Car;
Pickup truck; Solo Flat Bed and misc. Body Trucks, 0-10 tons;
Truck Tender; Truck Mechanic Tender; Water Wagons (rated
capacity) up to 3,000 gallons; Transit Mix and Wet or Dry Mix - 5
cu. yds. and under; Lubrication Man, Fuel Truck Driver, Tireman,
Wash Rack, Steam Cleaner or combinations; Team Driver; Slurry
Truck Driver or Leverman; Tireman

GROUP 2: Boom truck/hydra lift or retracting crane; Challenger;
Dumpsters or similar equipment all sizes; Dump Trucks/articulated
dumps 6 cu to 10 cu.; Flaherty Spreader Driver or Leverman;
Lowbed Equipment, Flat Bed Semi-trailer or doubles transporting
equipment or wet or dry materials; Lumber Carrier,
Driver-Straddle Carrier (used in loading, unloading and

transporting of materials on job site); Oil Distributor Driver or Leverman; Transit mix and wet or dry mix trucks: over 5 cu. yds. and including 7 cu. yds.; Vacuum trucks; Water truck/Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia nitrate distributor driver; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds. includes Articulated dump trucks; Selfpropelled street sweeper; Transit mix and wet or dry mix truck: over 7 cu yds. and including 11 cu yds.; Truck Mechanic-Welder-Body Repairman; Utility and cleanup truck; Water Wagons (rated capacity) over 5,000 to 10,000 gallons

GROUP 4: Asphalt burner; Dump Trucks, side, end and bottom dumps, including Semi-Trucks and Trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. includes articulated dump trucks; Fire guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds. includes articulated dump trucks

GROUP 6: Bulk cement spreader w/o auger; Dry prebatch concrete mix trucks; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 60 cu. yds. and including 80 cu. yds., and includes articulated dump trucks; Skid truck

GROUP 7: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds., includes articulated dump trucks; Industrial lift truck (mechanical tailgate)

TEAM0174A 06/01/2002

Rates Fringes
CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

TRUCK DRIVERS;

ZONE A:

GROUP 1:	25.79	9.68
GROUP 2:	25.21	9.68
GROUP 3:	22.81	9.68
GROUP 4:	18.56	9.68
GROUP 5:	25.55	9.68

ZONE B (25-45 miles from center of listed cities*):

Add \$.70 per hour to Zone A rates.

ZONE C (over 45 miles from center of listed cities*):

Add \$1.00 per hour to Zone A rates.

*Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM	CENTRALIA	RAYMOND	OLYMPIA
EVERETT	SHELTON	ANACORTES	BELLEVUE
SEATTLE	PORT ANGELES	MT. VERNON	KENT
TACOMA	PORT TOWNSEND	ABERDEEN	BREMERTON

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - "A-frame or Hydralift" trucks and Boom trucks or similar equipment when "A" frame or "Hydralift" and Boom truck or

similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat DW series, Terra Cobra, Le Tourneau, Westinghouse, Athye Wagon, Euclid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards \$.15 per hour additional for each 10 yard increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site; Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghouse, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor truck; Slurry Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small, rubber-tired)(when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch Truck; Wrecker, Tow truck and similar equipment

GROUP 3 - Flatbed (single rear axle); Pickup Sweeper; Pickup Truck. (Adjust Group 3 upward by \$2.00 per hour for onsite work only)

GROUP 4 - Escort or Pilot Car

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is

required, shall be compensated as a premium, in addition to the classification working in as follows:

LEVEL C: +\$.25 per hour - This level uses an air purifying respirator or additional protective clothing.

LEVEL B: +\$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."

LEVEL A: +\$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

TEAM0760C 06/01/2002

Rates Fringes
ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY,
FRANKLIN, GARFIELD, GRANT KITTITAS, LINCOLN, OKANOGAN, PEND
OREILLE, SPOKANE, STEVENS, WALLA WALLA, AND WHITMAN COUNTIES

TRUCK DRIVERS

(ANYONE WORKING ON HAZMAT JOBS SEE FOOTNOTE A BELOW)

ZONE 1: (INCLUDES ALL OF YAKIMA COUNTY)

GROUP 1	17.73	8.50
GROUP 2	20.00	8.50
GROUP 3	20.50	8.50
GROUP 4	20.83	8.50
GROUP 5	20.94	8.50
GROUP 6	21.11	8.50
GROUP 7	21.64	8.50
GROUP 8	21.97	8.50

Zone Differential (Add to Zone 1
rate: Zone 2 - \$2.00)

BASE POINTS: Spokane, Moses Lake, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.

Zone 2: 45 radius miles and over from the main post office

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Escort Driver or Pilot Car; Employee Haul; Power Boat
Hauling Employees or Material

GROUP 2: Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and
under); Leverperson (loading trucks at bunkers); Trailer Mounted
Hydro Seeder and Mulcher; Seeder & Mulcher; Stationary Fuel
Operator; Tractor (small, rubber-tired, pulling trailer or
similar equipment)

GROUP 3: Auto Crane (2000 lbs. capacity); Buggy Mobile &
Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. & under);
Flat Bed Truck with Hydraulic System; Fork Lift (3001-16,000
lbs.); Fuel Truck Driver, Steamcleaner & Washer; Power Operated
Sweeper; Rubber-tired Tunnel Jumbo; Scissors Truck; Slurry Truck

Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom & articulated end dump (3 yards to and including 6 yds.); Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

GROUP 4: A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom & articulated end dump (over 6 yards to and including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8,000 gallons)

GROUP 5: Dumptor (over 6 yds.); Lowboy (50 tons & under); Self-loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds.

to and including 10 yds.); Trucks, side, end, bottom and end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled, up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Mechanic (Field); Semi-end Dumps; Transfer Truck & Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and articulated end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DW's & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater Water Tank Truck (8,001-14,000 gallons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable operated trailer); Transit Mixers & Trucks Hauling Concrete (over 20 yds.); Truck, side, end, bottom end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons);

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

Footnote A - Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in additon to the classification working in as follows:

LEVEL C-D: - \$.50 PER HOUR (This is the lowest level of protection. This level may use an air purifying respirator or additional protective clothing.

LEVEL A-B: - \$1.00 PER HOUR (Uses supplied air is conjunction with a chemical spash suit or fully encapsulated suit with a self-contained breathing apparatus.

NOTE: Trucks Pulling Equipment Trailers: shall receive \$.15/hour over applicable truck rate

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment

data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor

200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION

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SECTION 01001

SUPPLEMENTARY REQUIREMENTS

PART 1 GENERAL

1.1 DEFINITIONS

The references listed below are to be defined as indicated wherever they may be used in the TECHNICAL SPECIFICATIONS.

"SUPPLEMENTARY REQUIREMENTS " shall be read to pertain to any of the sections of the DIVISION 1 as required by the content of the section or paragraph containing the reference.

1.2 CONSTRUCTION SCHEDULING

The instructions for preparation and submittal of the Contractor-prepared Network Analysis System are found in Section 01320 PROJECT SCHEDULE.

1.3 CORRESPONDENCE

1.3.1 All correspondence shall be addressed to the Administrative Contracting Officer, shall be serially numbered commencing with Number 1, with no numbers missing or duplicated and shall be furnished with an original and one copy. Enclosures attached or transmitted with the correspondence shall also be furnished with an original and one copy. Each serial letter shall make reference to the contract name, contract number and shall have only one subject.

1.3.2 All correspondence from the Contracting Officer will be also serially numbered with no numbers missing or duplicated. Letters to the Contractor will be forwarded in duplicate.

1.3.3 For submission of Contractor payment requests, See Section 01025, PAYMENT.

1.4 CONTRACTOR'S FILES

Contractor shall maintain "Approved (Action Code "A") and "Approved Except as Noted (Action Code "B") shop drawing files at project sites for Government use.

1.5 PROJECT PHOTOGRAPHS

1.5.1 General

The Contractor shall furnish photographs depicting construction as specified herein. The photographs shall be in digital JPEG format, with a resolution of 1024 x 768 pixels or better, size limited to less than 300KB. Photos shall be submitted in a Word document, with a caption under each photo showing date taken, project location, contract title and number, and a brief description of what the photo depicts. The photos shall be submitted on a 133 mm ISO-9660 CD-ROM.

1.5.2 Progress Photographs

Construction progress photographs shall be taken between the 1st and 15th of each month and delivered to the Contracting Officer with the payment request for the month taken. Photos shall be taken from 10 positions. Location of positions shall be coordinated with or may be selected by the Contracting Officer. They shall show, inasmuch as practicable, work accomplished during the previous month. Photographic quality and composition of photos shall be such that they can be used for briefings and/or to illustrate articles on the construction progress of the project.

1.5.3 Completion Photographs

Construction completion photographs (in digital JPEG format) shall be taken upon completion of construction and delivered to the Contracting Officer not later than 15 days prior to project completion. It is the intention of the Government to obtain slides whose color, clarity, and composition are such that they can be used for briefings and/or to illustrate articles on the completed project. Slides shall be taken from 10 positions. Location of positions shall be coordinated with or may be selected by the Contracting Officer. Slides shall show the completed project to the best advantage, and shall include overall site photos as well as photos of major features.

1.6 PERMITS OBTAINED BY GOVERNMENT AND CONTRACTOR RESPONSIBILITIES

The Government has obtained the following permits/licenses related to the construction of this project:

- Hydraulic Project Approval Permit, Wash. St. Dept. of Fish and Wildlife (Attachment A)
- 401 Water Quality Certification, Washington St. Dept. of Ecology (Attachment B)
- Substantial Development Permit, City of Snoqualmie (Attachment C)
- City of Snoqualmie, Hearing Examiner, Findings, Conclusions and Decision (Attachment D)

It will be the responsibility of the Contractor to obtain all other permits/licenses required for this project. See the Contract Clause paragraph entitled PERMITS AND RESPONSIBILITIES.

1.7 PRESERVATION OF HISTORICAL, ARCHEOLOGICAL AND CULTURAL RESOURCES (1985 JAN OCE):

(a) Known historical, archeological and cultural resources within the Contractor's work area are designated on the contract drawings. The Contractor shall install protection for these resources as shown on the drawings and shall be responsible for their preservation during the contract.

(b) If, during construction activities, the Contractor observes items that might have historical or archeological value, such observations shall be reported immediately to the Contracting Officer so that the appropriate authorities may be notified and a determination can be made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

1.8 SPECIAL SAFETY REQUIREMENTS:

All construction activities shall be conducted in strict compliance with the Corps of Engineers Safety and Health Requirements Manual EM 385-1-1, and Occupational Safety and Health Administration regulations, as applicable. The manual is available on line at:
<http://www.usace.army.mil/soh/em385/current/current38511.htm>

1.8.1 In addition to Safety and Health Requirements Manual EM 385-1-1, and all applicable OSHA standards, the Contractor shall comply with the requirements listed below. Paragraph numbers refer to EM 385-1-1 or are added thereto.

(a) Paragraph 01.A.12: Add new paragraph: Safety Engineer (1985 JAN OCE) (DAM 52.236/103):

(1) The Contractor shall employ at the project site to cover all hours of work at least one Safety and Occupational Health person to manage the Contractor's accident program. The principal safety person shall report to and work directly for the Contractor's on-site top manager, higher level official, or corporate safety office. The Safety and Health person(s) shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of a Safety and Health person will not abrogate safety responsibilities of other personnel.

(2) Qualifications for Safety and Occupational Health person(s).

(A) Shall have a degree in engineering or safety in at least a four-year program from an accredited school; or

(B) Shall have legal registration as a Professional Engineer or a Certified Safety Professional and, in addition, shall have been engaged in safety and occupational health for at least one (1) year of experience, no time being credited to this one (1) year unless at least fifty (50) percent of the time each year was devoted to safety and occupational health; or

(C) Shall have a degree other than that specified in (A) above and, in addition, shall have been engaged in safety and occupational health for at least three (3) years' no time being credited to these three (3) years unless fifty (50) percent of the time each year was devoted to safety and occupational health; or

(D) In lieu of a degree, shall have been engaged in safety and occupational health for at least five (5) years, no time being credited to these (5) years unless at least fifty (50) percent of the time each year was devoted to safety and occupational health;

(E) First aid work is not a creditable experience.

(b) Paragraph 01.D.02, revise as follows:

(1) Replace paragraph 01.D.02e with the following:
"e. Property damage in excess of \$2,000.00"

(2) Add new paragraph f as follows:
"An injury resulting in a lost workday, not including the day of injury."

1.8.2 All diving shall be done in accordance with EM 385-1-1, Section 30.

1.9 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (ER 415-1-15 31 OCT 89)

This Paragraph specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE entitled "Default (Fixed Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

1.9.1 The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

1.9.2 The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

1.9.3 The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORK DAYS BASED ON (5) DAY WORK WEEK

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	
10	7	7	4	4	3	1	2	3	6	8	10	Seattle, Wa.

1.9.4 Upon acknowledgment of the notice to proceed (NTP) and continuing throughout the contract, the contractor will record on the daily QCQ report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delays must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day.

1.9.5 The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 1.9.3, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled " Default (Fixed Price Construction)".

1.10 SUBCONTRACTORS

Assurance of compliance with this contract by sub-contractors will be the responsibility of the Contractor.

PARTS 2 AND 3 NOT USED

END OF SECTION

Attachment A
Hydraulic Project Approval Permit
Washington State Department of Fish and Wildlife

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HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Region 4 Office
16018 Mill Creek Boulevard
Mill Creek, Washington 98012

DATE OF ISSUE: May 15, 2003

LOG NUMBER: ST-F1079-03

<u>PERMITTEE</u>	<u>AUTHORIZED AGENT OR CONTRACTOR</u>
King County Water and Land Resources Division ATTENTION: Tom Bean 201 S. Jackson Street, Suite 600 Seattle, Washington 98104 206-296-8377 Fax: 206-205-5134	Not applicable

Note 1: The second version of this HPA was to change provision #7 of the original HPA. That provision specified financial responsibility of the permittee for any fish kill. However, mitigation for the possible deaths of fish that avoid capture or get past block nets, despite good efforts on the part of the permittee to remove fish from the blasting area, was included in the project's overall mitigation negotiated in December 2002. Therefore provision #7 has been changed. The only change from the original in this HPA revision is the wording of provision #7 (plus this note, date of issue, and Log Number).

Note 2: This revision of the HPA is to specify mitigation for large fish kills. Only provision # 7 has been changed from the second version.

PROJECT DESCRIPTION: Excavate both banks of the Snoqualmie River, starting about 500-feet upstream of the falls, to remove a bottleneck that backs floodwater into the City of Snoqualmie. Remove riverbank trees in the area of the excavations. Remove an abandoned railroad bridge from the Snoqualmie River. Remove fish by netting operations from the section of the river where the banks will be excavated. Excavation via blasting bedrock is authorized. Use of barges secured to the riverbed by spuds penetrating into the river bed is authorized for the railroad bridge removal.

Project description code words for WDFW use: channel modification, bank excavation to widen river, => 500 cubic yards; new; permanent, fixed, fresh water, on bed; natural, wood, raw; water crossing structure, bridge, removal.

PROJECT LOCATION: Right bank widening: 300 feet upstream of the hydroelectric dam at Snoqualmie Falls.
Left bank widening: immediately downstream of SR 202 bridge above Snoqualmie Falls.
RR bridge removal: about 1600 feet SE of the SR 202 bridge. Latitude 47.5404N,
Longitude 121.8358W.

#	<u>WRIA</u>	<u>WATER BODY</u>	<u>TRIBUTARY TO</u>	<u>1/4 SEC.</u>	<u>SEC.</u>	<u>TOWNSHIP</u>	<u>RANGE</u>	<u>COUNTY</u>
1	07.0219	Snoqualmie River mainstem	Snohomish River	NE	30	24 North	08 East	King

PROVISIONS

1. **TIMING LIMITATIONS:** The project may begin April 1, 2004 and shall be completed by December 31, 2004.



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Region 4 Office
16018 Mill Creek Boulevard
Mill Creek, Washington 98012

DATE OF ISSUE: May 15, 2003

LOG NUMBER: ST-F1079-03

- a. Note: work for this project is allowed outside the normal fish window because cutthroat trout are the species of main concern at this site above the falls, and cutthroat are unlikely to use the mainstem in this river segment for spawning.
2. **First NOTIFICATION REQUIREMENT:** The permittee or contractor shall notify the Area Habitat Biologist (AHB) listed below of the fish removal operations start date. Notification shall be received by the AHB at least three working days prior to the start of fish removal activities. Notification via phone or voicemail at 425-379-2303, or via email at hennidgh@dfw.wa.gov is adequate.
3. **Second NOTIFICATION REQUIREMENT:** The permittee or contractor shall notify the Area Habitat Biologist (AHB) listed below of the exact date and approximate time blasting is to occur. Notification shall be received no less than three working days prior to desired date of blasting. Notification via phone or voicemail at 425-379-2303, or via email at hennidgh@dfw.wa.gov is adequate.
4. Work shall be accomplished per plans and specifications entitled: Snoqualmie River Project Snoqualmie Falls, Washington, dated July 18, 2002; and Record of Agreement Concerning Downstream Fish Mitigation for the Snoqualmie Section 205 Flood Damage Reduction Project, dated January 29, 2003; and, for fish removal, page 7 of the Water Quality Protection Plan, Snoqualmie River Section 205 Flood Control Project, dated June 7, 2002; and Department of Ecology Order # 02SEANR-4919, dated August 20, 2002; and Off-Site Planting Plan for Snoqualmie 205, dated March 18, 2003, submitted to the Washington Department of Fish and Wildlife, except as modified by this Hydraulic Project Approval. These plans reflect design criteria per Chapter 220-110 WAC. These plans reflect mitigation procedures to significantly reduce or eliminate impacts to fish resources. A copy of these plans shall be available on site during construction.
5. Fish habitat components such as rootwads with boles embedded in the banks are required as part of the bank widening project to mitigate project impacts. These fish habitat components shall be installed to withstand 100-year peak flows, and shall be installed at elevations to be in contact with the water at low flow.
6. Prior to any blasting, the permittee shall capture and safely move food fish, game fish, and other fish life from an area at least 400 feet upstream and 75 feet downstream from the blast site. The permittee shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be safely transferred to free-flowing water upstream from the blast area, and released over a river segment long enough to optimize survival of the transported fish and the fish already established on the sites of release. The work area shall be blocked to prevent the re-entry of fish into the blast area. This requires the use of block nets or seines.
7. The permittee shall provide additional mitigation for large kills of fish (more than 100 fish) that occur due to failure of fish removal operations or pollution by supplementing the Off-Site Planting Plan for Snoqualmie 205, dated March 18, 2003, with additional river bank plantings of similar character. Such mitigation shall consist of two additional tree plantings for every observed fish death. However, kills during blasting operations of small numbers of fish (100 or less) that escaped capture during good efforts at fish removal, or that entered the capture area despite good efforts at blockage against entry, are authorized due to inclusion of mitigation for the possibility of such kills in the overall mitigation of the project. A written report detailing any fish kills and subsequent actions shall be submitted to the Area Habitat Biologist as soon as possible following any kill, but no more than 15 days subsequent to the fish kill.
8. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
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DATE OF ISSUE: May 15, 2003

LOG NUMBER: ST-F1079-03

other means. The banks at the excavation areas shall be vegetated according to Plate L-2 of the plans, and maintained as necessary for three years to ensure 80 percent survival. In the area of riverbank disturbance caused by removal of the railroad bridge, willow cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival, or a planting plan designed to accomplish better ecological functions, approved by King County Ecologists, shall be carried out and maintained for at least three years.

9. Every effort shall be taken during all phases of this project to ensure that sediment-laden water nor other pollutants are allowed to enter the stream. Sediment and other pollutants shall be controlled as required by the Department of Ecology Order # 02SEANR-4919.

SEPA: DNS by City of Snoqualmie final on January 7, 2002.

APPLICATION ACCEPTED: May 15, 2003

ENFORCEMENT OFFICER: Boone (30) [P2]

Douglas G. Hennick
Area Habitat Biologist

(425) 379-2303

Douglas G. Hennick

for Director
WDFW

GENERAL PROVISIONS

This Hydraulic Project Approval (HPA) pertains only to the provisions of the Fisheries Code (RCW 77.55 - formerly RCW 75.20). Additional authorization from other public agencies may be necessary for this project.

This HPA shall be available on the job site at all times and all its provisions followed by the permittee and operator(s) performing the work.

This HPA does not authorize trespass.

The person(s) to whom this HPA is issued may be held liable for any loss or damage to fish life or fish habitat which results from failure to comply with the provisions of this HPA.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All HPAs issued pursuant to RCW 77.55.100 or 77.55.200 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The permittee has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All HPAs issued pursuant to RCW 77.55.110 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation with the permittee: **PROVIDED HOWEVER**, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.170.

APPEALS - GENERAL INFORMATION



HYDRAULIC PROJECT APPROVAL
RCW 77.55.100 - appeal pursuant to Chapter 34.05 RCW

State of Washington
Department of Fish and Wildlife
Region 4 Office
16018 Mill Creek Boulevard
Mill Creek, Washington 98012

DATE OF ISSUE: May 15, 2003

LOG NUMBER: ST-F1079-03

IF YOU WISH TO APPEAL A DENIAL OF OR CONDITIONS PROVIDED IN A HYDRAULIC PROJECT APPROVAL, THERE ARE INFORMAL AND FORMAL APPEAL PROCESSES AVAILABLE.

A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100, 77.55.110, 77.55.140, 77.55.190, 77.55.200, and 77.55.290:

A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

- (A) The denial or issuance of a HPA, or the conditions or provisions made part of a HPA; or
- (B) An order imposing civil penalties.

It is recommended that an aggrieved party contact the Area Habitat Biologist and discuss the concerns. Most problems are resolved at this level, but if not, you may elevate your concerns to his/her supervisor. A request for an **INFORMAL REVIEW** shall be in **WRITING** to the Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be **RECEIVED** by the Department within 30-days of the denial or issuance of a HPA or receipt of an order imposing civil penalties. The 30-day time requirement may be stayed by the Department if negotiations are occurring between the aggrieved party and the Area Habitat Biologist and/or his/her supervisor. The Habitat Protection Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or its designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.

B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.100 OR 77.55.140:

A person who is aggrieved or adversely affected by the following Department actions may request an formal review of:

- (A) The denial or issuance of a HPA, or the conditions or provisions made part of a HPA;
- (B) An order imposing civil penalties; or
- (C) Any other "agency action" for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a **FORMAL APPEAL** shall be in **WRITING** to the Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091, shall be plainly labeled as "**REQUEST FOR FORMAL APPEAL**" and shall be **RECEIVED DURING OFFICE HOURS** by the Department within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.110, 77.55.200, 77.55.230, or 77.55.290:

A person who is aggrieved or adversely affected by the denial or issuance of a HPA, or the conditions or provisions made part of a HPA may request a formal appeal. The request for **FORMAL APPEAL** shall be in **WRITING** to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.

D. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS RESULTS IN FORFEITURE OF ALL APPEAL RIGHTS. IF THERE IS NO TIMELY REQUEST FOR AN APPEAL, THE DEPARTMENT ACTION SHALL BE FINAL AND UNAPPEALABLE.

Attachment B
401 Water Quality Certification
Washington State Department of Ecology

01001-B-i

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

August 20, 2002

REGISTERED MAIL – RR 359 892 725 US and RR 359 892 734 US

Paul W. Cooke
U.S. Army Corps of Engineers
Planning Branch
PO Box 3755
Seattle, WA 98124-2255

Tom Bean
King County Department of Natural Resources
201 S. Jackson Street, Suite 600
Seattle, WA 98104-3855

Dear Mr. Cooke and Mr. Bean:

RE: **Order # 02SEANR-4619**
U.S. Army Corps of Engineers # PL-01-03-- Water Quality Certification / Coastal Zone
Consistency Determination for construction of Snoqualmie River Section 205 Flood
Control Project, Snoqualmie, Washington.

The request for certification for proposed work in Snoqualmie River has been reviewed. On behalf of the State of Washington, we certify that the proposed work, as conditioned by the enclosed Order, will comply with applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, as amended, and other appropriate requirements of State law. This letter also serves as the State response to the Corps of Engineers.

Pursuant to 16 U.S.C. 1456 et. seq. (Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended), Ecology concurs with the applicant's determination that this work will be consistent with the approved Washington State Coastal Zone Management Program. This concurrence is based upon the applicant's compliance with all applicable enforceable policies of the Coastal Zone Management Program, including Section 401 of the Federal Water Pollution Control Act.

This certification is subject to the conditions contained in the enclosed Order.



Paul W. Cooke
Tom Bean
August 20, 2002
Page 2 of 2

If you have any questions, please contact Alice Kelly at (425) 649-7145. Written comments can be sent to her at the Department of Ecology, 3190 - 160th Ave. SE, Bellevue, WA 98008. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

A handwritten signature in cursive script that reads "Jeannie Summerhays".

Jeannie Summerhays
Section Manager
Shorelands and Environmental Assistance Program

JS:AK:sa

Enclosure

cc: Michael Scuderi - Corps
Doug Hennick - WDFW
Deborah Cornett - WDFW
Ron Devitt - Ecology
Chuck Steele - Ecology

Department of Ecology
Northwest Regional Office

THE MATTER OF GRANTING A	) ORDER # 02SEANR-4619
WATER QUALITY	) Corps #PL-01-03
CERTIFICATION TO	) Construction of flood damage reduction project
U.S. Army Corps of Engineers and	) on the Snoqualmie River by widening of river
King Co. Dept. of Natural Resources	) upstream of Snoqualmie Falls; removal of
in accordance with 33 U.S.C. 1341	) railroad bridge; located near City of Snoqualmie,
FWPCA § 401, RCW 90.48.260 and	) Section 30, T. 24 N., R. 8 E., King County,
Chapter 173-201A WAC	) Washington.

TO: Paul W. Cooke
U.S. Army Corps of Engineers
Planning Branch
PO Box 3755
Seattle, WA 98124-2255

Tom Bean
King County Department of Natural Resources
201 S. Jackson Street, Suite 600
Seattle, WA 98104-3855

On November 14, 2001, a public notice for a proposed water quality certification from the State of Washington was distributed for the above-referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA §401). The purpose of the proposed project is to reduce flooding in the City of Snoqualmie by widening the Snoqualmie River downstream of the City of Snoqualmie, above Snoqualmie Falls, between river mile (RM) 40 and RM 42.

Previous public notice TB-99-01 was issued on June 14, 1999 for this project, which initiated the one-year review for water quality certification. On June 12, 2000, the U.S. Army Corps of Engineers withdrew their request for water quality certification pending design changes. Review by Ecology started again with issuance of the November 14, 2001 public notice.

Right-bank widening consists of removing an existing rock outcrop just upstream from the Puget Sound Energy facility footbridge. The channel in this reach would be widened from about 140 feet to 200 feet, along approximately 340 linear feet of river shoreline. The rock will be excavated by directional blasting, which will be used to provide alcoves for fish refuge and areas for plantings. Approximately 8,056 cubic yards of rock and dirt will be excavated landward of ordinary high water mark; 2,648 cubic yards of material will be removed waterward of ordinary high water mark.

Left-bank widening consists of removing 12,819 cubic yards of earth and rock landward of ordinary high water mark and 8,210 cubic yards of material waterward of ordinary high water

mark, along 475 linear feet of river shoreline. The channel would be widened from about 150 to 175 feet to 200 feet in order to increase the hydraulic efficiency of the channel area during a flood. The bank will be stabilized by placement of rip-rap, with a bench of vegetation placed between elevation 404 and 406.

Additional work on the left bank includes removal of an abandoned railroad bridge upstream of the Highway 202 bridge.

AUTHORITIES:

In exercising authority under 33 U.S.C. 1341, 16 U.S.C. 1456, and RCW 90.48.260, Ecology has investigated this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 303, 306 and 307);
2. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other appropriate requirements of state law; and
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

CONDITIONS OF ORDER # 02SEANR-4619 AND WATER QUALITY CERTIFICATION:

In view of the foregoing and in accordance with 33 U.S.C. 1341, 90.48.260 RCW and Chapter 173-201A WAC, water quality certification is granted to the U.S. Army Corps of Engineers and King County subject to the following conditions:

A. No Impairment of Water Quality:

- A1. The Snoqualmie River is classified as Class A waters of the state. Certification of this proposal does not authorize the U.S. Army Corps of Engineers and King County to exceed applicable state water quality standards (Chapter 173-201A Washington Administrative Code (WAC)) or sediment quality standards (Chapter 173-204 WAC). Water quality criteria contained in WAC 173-201A-030(1) and WAC 173-201A-040 shall apply to this project, unless otherwise authorized by Ecology. Nothing in this certification shall absolve the U.S. Army Corps of Engineers and King County from liability for contamination and any subsequent cleanup of surface waters or sediments occurring as a result of project construction or operations.

The Snoqualmie River has been identified on the current 303(d) list as exceeding state water quality standards for temperature. This proposed project shall not result in further exceedances of water quality standards.

B. Pre-Construction Meeting

- B1. Before in-water construction begins, a pre-construction meeting shall be held on-site between the project engineer, all necessary construction contractors, and agency representatives including Department of Ecology and Washington Department of Fish and Wildlife. During this meeting, site conditions, permit specifications and the requirements of the water quality monitoring plan and the sediment and erosion control plans will be reviewed. This will assist all involved parties in understanding the intent, specifications, and requirements of the permits and plans. Notification of the meeting shall occur at least 5 working days in advance of the meeting.

C. Dredging and In-water Activity:

C1. Short-Term Modification to the Water Quality Standards:

The dredging operation may cause water quality effects that will exceed the state water quality criteria specified in WAC 173-201A. Per WAC 173-201A-110, Ecology may grant a modification to the standards to allow for exceedances of the criteria on a short-term basis when necessary to accommodate essential activities. The Snoqualmie River is classified as Class A and the criteria of that class apply except as specifically modified by this Order. Turbidity in Class A waters shall not exceed 5 NTU over background when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

Mixing zones (or zones of disturbance) can be authorized to allow for temporary exceedances of certain water quality standards in state waters immediately adjacent to a permitted project. For this project, a mixing zone of 500 feet downstream from the downstream edge of the in-water activities is considered reasonably sufficient to allow for temporary water quality exceedances. Within the mixing zone, the Class A standard for turbidity is waived. The Class A standard for dissolved oxygen may be exceeded but shall not be caused to drop below 6.0 mg/l. All other applicable water quality standards shall remain in effect within the mixing zone and all other water quality standards are to be met outside of the authorized mixing zone.

- C2. This modification shall remain in effect for the entire duration of time necessary to complete the work. However, the waiver of specified standards within the mixing zone is intended for brief periods of time (such as a few hours or a day) and is not an authorization to exceed those standards for the entire duration of construction. In no case does the waiver authorize degradation of water quality that significantly interferes with or becomes injurious to characteristic water uses, including fisheries habitat, or causes long-term harm to the Snoqualmie River.

- C3. If dredged material is placed on the adjacent uplands to dewater, a protective berm of suitable material, such as concrete blocks, wood planks, etc., shall be placed to retain the dredged material as it dewateres to prevent the uncontrolled discharge of return flows back into the waters of the state. Any return flows shall be controlled so as to minimize suspended sediments and excess turbidity.

D. Water Quality Sampling and Monitoring:

- D1. The Water Quality Protection Plan, developed by the U.S. Army Corps of Engineers, dated June 7, 2002, shall be implemented with the following changes and additions:

Location of water quality monitoring points: A minimum of four water sampling points shall be established, as follows:

- A. A point approximately 500 feet downstream of the left bank widening activity, slightly upstream or even with the right-bank activity zone. This is the compliance point for monitoring of left bank activity.
- B. A point downstream of Snoqualmie Falls, as far upstream as safe and practicable, for monitoring of right bank activity. This is the compliance point for right bank activity when the Puget Sound Energy penstock diversion is not operating.
- C. A point 500 feet or less downstream of the penstock discharge point, for compliance monitoring of right bank activity when the Puget Sound Energy penstock diversion is operating.
- D. Baseline monitoring point upstream of activity.
- E. Frequency of Monitoring: Monitoring shall take place at the sampling points a minimum of every two hours throughout the first day of construction activity. If monitoring indicates turbidity standards are not being met at the boundary of the mixing zone, measures shall be taken to reduce turbidity rates, such as reducing the rate of dredging, placement of a second sediment curtain, etc. If monitoring shows that standards are being met at the mixing zone boundary, then monitoring may be reduced to twice per day. Sampling shall increase if exceedances are detected. Sampling inside the silt curtain is optional.
- F. Monitoring shall take place a minimum of every two hours during the days that blasting occurs.

Note: The water quality monitoring plan, including frequency of monitoring, shall be amended and supplemented as necessary to address specific site conditions that may arise. Amendments to the water quality monitoring plan shall be reviewed and approved by Ecology.

- D2. At the compliance points, turbidity in Class A waters shall not exceed 5 NTU over background when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
- D3. If no exceedances are detected, results of water quality sampling shall be forwarded once per week to Alice Kelly at Department of Ecology, e-mail akel461@ecy.wa.gov, and Ron Devitt at e-mail rdev461@ecy.wa.gov or fax at (425) 649-7098.
- D4. If exceedances are detected, immediately take action to stop, contain, and clean up unauthorized discharges or otherwise stop the violation and correct the problem. Contingency measures shall be implemented.
- Notify Ecology of the failure to comply. Spill events shall be reported immediately to Ecology's 24-Hour Spill Response Team at (425) 649-7000, and within 24 hours to Ecology's Alice Kelly at (425) 649-7145.
 - Submit a detailed written report to Ecology within five days that describes the nature of the violation, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
- D5. The Erosion and Sediment Control Plan shall be submitted to Ecology after the contractor has been selected, based on site-specific information and conditions. The Plan shall be revised and/or added to as necessary to address specific situations that may arise during construction. The Plan shall be submitted to Ecology at least 15 days before construction begins.
- E. Mitigation**
- E1. On-site revegetation of the left bank is required per the specifications in the revegetation plan submitted by the applicant. Monitoring and control of invasive plants is required.
- E2. Off-site additional riparian plantings to mitigate for temporal loss of mature riparian vegetation is required.

The applicant and/or sponsors shall provide additional riparian vegetation as follows: Native trees, minimum 6-feet in height, shall be planted at 11-foot centers along the Snoqualmie River upstream of Snoqualmie Falls. The plantings shall cover an area three times the area of the drip line of the trees removed from the left bank widening section. The trees shall be planted in an area(s) not currently vegetated with trees. An as-built plan shall be submitted to Ecology after planting is complete, in no case later than December 31, 2003.

- E3. The City of Snoqualmie is a local sponsor of this bank-widening project. The City is separately pursuing a berm removal project in this reach of the Snoqualmie River that will provide additional flood storage. This storage will offset some of the potential impacts of increased flows downstream due to the bank-widening project. The berm project involves removal of a 5,650 foot long berm located upstream of the falls on the south side of Weyerhaeuser property. Berm removal is estimated to provide approximately 350 acre feet of flood storage, and is currently partially removed. Ecology will expect the remainder of the berm to be removed by December 31, 2005. If removal is delayed, the applicant or local sponsor shall notify Ecology of the delay and reason for the delay. If the berm removal is not completed, this permit will be void until the applicant and/or sponsors provide a plan to Ecology for its review and written approval for additional flood-storage mitigation within one year of abandonment of the berm removal project. The Washington State Department of Fish and Wildlife (WDFW) has indicated that additional data will be required by WDFW to determine possible downstream impacts to fisheries resources by increase in peak flows. The Corps and local government sponsors shall provide this data to Ecology when it is provided to WDFW. If the data does not indicate a downstream impact to the fisheries resources, no further mitigation beyond removal of the Weyerhaeuser berm will be required by Ecology. If the data indicates a downstream impact to the fisheries resource, the Corps and local government's sponsors, in coordination with WDFW, shall develop a downstream fisheries mitigation plan acceptable to mitigation the impacts. Mitigation currently being evaluated involves enhancement of Chinook habitat by removal or breaching of a levee on Spencer Island in the lower Snohomish Estuary or habitat restoration in the Stillwater basin. If these two projects are determined to be impractical or infeasible by the sponsors, Corps, or WDFW, an alternative mitigation plan shall be developed. The mitigation plan shall be submitted to WDFW for approval and to Ecology for review.

F. Construction Stormwater and Erosion Control:

- F1. Work in or near waters of the state shall be done so as to minimize turbidity, erosion, and other water quality impacts. Construction stormwater, sediment and erosion control Best Management Practices suitable to prevent exceedances of state water quality standards (e.g., silt curtains, detention areas, filter fences, etc.) shall be in place before starting construction.
- F2. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall be contained for proper disposal, and shall not be discharged into state waters.

G. Emergency/Contingency Measures:

- G1. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
- G2. In the event the applicant is unable to comply with any of the permit terms and conditions (including turbidity standards) due to any cause, the applicant shall:
- Immediately take action to stop, contain, and clean up unauthorized discharges or otherwise stop the violation and correct the problem.
 - Notify Ecology of the failure to comply. Spill events shall be reported immediately to Ecology's 24-Hour Spill Response Team at (425) 649-7000, and within 24 hours to Ecology's Alice Kelly at (425) 649-7145.
 - Submit a detailed written report to Ecology within five days that describes the nature of the violation, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

Compliance with this condition does not relieve the applicant from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

H. Other Permits and Approvals

- City of Snoqualmie Adoption of NEPA Environmental Assessment for SEPA Determination of Non-Significance, dated January 7, 2002.
- Shoreline Permit SH 00-08 issued by the City of Snoqualmie on March 29, 2002.

I. General Conditions:

- I1. For purposes of this Order, the term "Applicant" shall mean U.S. Army Corps of Engineers and King County Department of Natural Resources and its agents, assigns, and contractors.
- I2. This certification does not exempt and is provisional upon compliance with other statutes and codes administered by federal, state, and local agencies.
- I3. Notification: The applicant shall provide notice to Ecology's Alice Kelly at least 3 days prior to the start of construction. Notification can take place by e-mail to akel461@ecy.wa.gov, telephone to (425) 649-7145, fax to (425) 649-7098, or in writing.

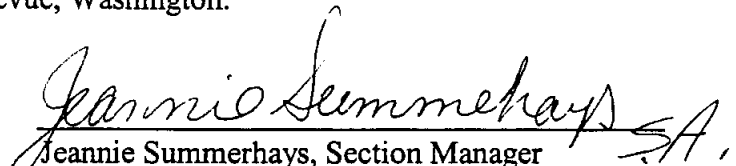
- I4. The applicant will be out of compliance with this certification if the project is constructed and/or operated in a manner not consistent with the project description contained in the Public Notice for certification, or as otherwise approved by Ecology. Additional mitigation measures may be required through other local, state, or federal requirements.
- I5. The applicant will be out of compliance with this certification and must reapply with an updated application if five years elapse between the date of the issuance of this certification and the beginning of construction and/or discharge for which the federal license or permit is being sought.
- I6. The applicant will be out of compliance with this certification and must reapply with an updated application if the information contained in the Public Notice is voided by subsequent submittals to the federal agency. Any future action at this project location, emergency or otherwise, that is not defined in the public notice, or has not been approved by Ecology, is not authorized by this Order. All future actions shall be coordinated with Ecology for approval prior to implementation of such action.
- I7. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and foremen, and state and local government inspectors.
- I8. To avoid violations or non-compliance with this Order, the applicant shall ensure that project managers, construction superintendents, and other responsible parties have read and understand relevant aspects of this Order, the HPA, and any subsequent revisions or Ecology-approved plans. To achieve this, the U.S. Army Corps of Engineers and King County shall provide to Ecology a signed statement from each project manager and construction superintendent working at the project that they have read and understand the conditions of this Section 401 Water Quality Certification and other environmental permits authorizing this project. These statements shall be provided to Ecology no less than seven (7) days before construction begins at each project or mitigation site.
- I9. The applicant shall provide access to the project site upon request by Ecology personnel for site inspections, monitoring, necessary data collection, or to ensure that conditions of this Order are being met.
- I10. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines further actions are necessary to implement the water quality laws of the state. Further Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect the public interest.

111. Liability: Any person who fails to comply with any provision of this Order shall be liable for a penalty of up to ten thousand dollars (\$10,000) per violation for each day of continuing noncompliance.

Appeal Process:

Any person aggrieved by this Order may obtain review thereof by appeal, within thirty (30) days of receipt of this Order, to the Washington Pollution Control Hearings Board, P.O. Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Shorelands and Environmental Assistance Program, P.O. Box 47600, Olympia, WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Dated August 21, 2002 at Bellevue, Washington.


Jeannie Summerhays, Section Manager
Shorelands and Environmental Assistance
Program
Department of Ecology
State of Washington



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

December 10, 2002

CERTIFIED MAIL

7001 2510 002 0897 6392

Paul W. Cooke
U.S. Army Corps of Engineers
Planning Branch
PO Box 3755
Seattle, WA 98124-2255

Dear Mr. Cooke:

RE: **Order # 02SEANR-4619**
Amendment to Water Quality Certification for Snoqualmie Flood Reduction project, Snoqualmie,
Washington.

Enclosed is an amendment to Water Quality Certification for construction of the Snoqualmie Flood Reduction project by widening of the Snoqualmie River. On behalf of the State of Washington, we certify that the proposed work, as conditioned by the enclosed Order, will comply with applicable provisions of Sections 301, 302, 303, 306 and 307 of the Clean Water Act, as amended, and other appropriate requirements of State law.

This amendment is issued according to the settlement stipulation for Pollution Control Hearings Board Case No. 02-165.

This certification is subject to the conditions contained in the enclosed Order. If you have any questions, please contact Alice Kelly at (425) 649-7145. Written comments can be sent to her at the Department of Ecology, 3190 - 160th Ave. SE, Bellevue, WA 98008. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

A handwritten signature in cursive script that reads "Jeannie Summerhays".

Jeannie Summerhays
Section Manager
Shorelands and Environmental Assistance Program

JS:ak:jc

Enclosure

cc: Tom Bean, King County
Joseph Rochelle, King County
Michael Scuderi, Corps
Doug Hennick, WDFW
Deborah Cornett, WDFW
Ian Kanair, Snoqualmie Indian Tribe
Joan Marchioro, AG



**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

IN THE MATTER OF GRANTING)	
A WATER QUALITY	)	ORDER # 02SEANR-4619
CERTIFICATION TO	)	First Amendment
U.S. Army Corps of Engineers)	
Snoqualmie Flood Reduction Project)	
City of Snoqualmie, King County, Washington)	

This amendment is issued under the provisions of Chapter 90.48 RCW and Chapter 173-201A WAC.

Administrative Order No. 02SEANR-4619, issued August 20, 2002, is hereby amended as follows:

References to King County Department of Natural Resources as a permittee or recipient of the Order are deleted. Such references are deleted from all headers, addresses, and conditions A1, I1, and I8.

Condition E3. is replaced by two paragraphs as follows (includes correction of typographical errors):

- E3. The City of Snoqualmie is a local sponsor of this bank-widening project. The City is separately pursuing a berm removal project in this reach of the Snoqualmie River that will provide additional flood storage. This storage will offset some of the potential impacts of increased flows downstream due to the bank-widening project. The berm project involves removal of a 5,650 foot long berm located upstream of the falls on the south side of Weyerhaeuser property. Berm removal is estimated to provide approximately 350 acre feet of flood storage, and is currently partially removed. Ecology will expect the remainder of the berm to be removed by December 31, 2005. If removal is delayed, the applicant or local sponsor shall notify Ecology of the delay and reason for the delay. If the berm removal is not completed, this permit will be void until the applicant and/or sponsors provide a plan to Ecology for its review and written approval for additional flood-storage mitigation within one year of abandonment of the berm removal project.
- E4. The Washington State Department of Fish and Wildlife (WDFW) has indicated that additional data will be required by WDFW to determine possible downstream impacts to fisheries resources by increase in peak flows. The Corps and local government sponsors shall provide this data to Ecology when it is provided to WDFW. If the data does not indicate a downstream impact to the fisheries resources, no further mitigation beyond removal of the Weyerhaeuser berm will be required by Ecology. If the data indicates a downstream impact to the fisheries resource, the Corps, in consultation with the local government sponsors and in coordination with WDFW, shall develop and implement a downstream fisheries mitigation plan acceptable to mitigate the impacts. Mitigation currently being evaluated involves enhancement of Chinook habitat by removal or breaching of a levee on Spencer Island in the lower Snohomish Estuary or habitat

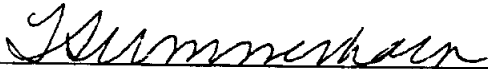
restoration in the Stillwater basin. If these two projects are determined to be impractical or infeasible by the sponsors, Corps, or WDFW, an alternative mitigation plan shall be developed. The mitigation plan shall be submitted to WDFW for approval and to Ecology for review.

No other conditions or requirements of the above-mentioned order are affected by this amendment.

The Department of Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if it appears necessary to further protect the public interest. Failure to comply with this Order may result in the issuance of civil penalties or other actions whether administrative or judicial, to enforce the terms of this Order.

Any person aggrieved by this Order may obtain review thereof by appeal. The Applicant can appeal up to 30 days after receipt of the permit, and all others can appeal up to 30 days from the postmarked date of the permit. The appeal must be sent to the Washington Pollution Control Hearings Board, P.O. Box 40903, Olympia WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Shorelands and Environmental Assistance Program, P.O. Box 47600, Olympia WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Dated 12/10/02 at Bellevue, Washington.


Jeannie Summerhays, Section Manager
Shorelands and Environmental Assistance Program

Attachment C
Substantial Development Permit SH 00-08
City of Snoqualmie

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NOTE: THIS PAGE FOR
GOVERNMENT USE ONLY

**SHORELINE MANAGEMENT ACT OF 1971
PERMIT FOR SHORELINE MANAGEMENT SUBSTANTIAL DEVELOPMENT,
CONDITIONAL USE, OR VARIANCE**

- ☒ Substantial Development Permit
☐ Variance
☐ Conditional Use

Administering Agency: City of Snoqualmie
Application No.: SH 00-08
Date Received: November 6, 2001
Date Complete: January 7, 2002
Approved ☒ Denied ☐
Date of Issuance: March 29, 2002
Date of Expiration: 2 years from the effective date of
this permit, pursuant to RCW 90.58.143 and WAC 173-
27-090

PART 1: BACKGROUND PERMIT INFORMATION

Pursuant to RCW 90.58, a permit is hereby granted, subject to the conditions set forth herein, to:

U.S. Army Corps of Engineers on application of:

*King County Department of Natural Resources
Water and Land Resources Division
201 South Jackson Street, Suite 600
Seattle, WA 98104-3855*

Note: The project proponent is the U.S. Army Corps of Engineers, and the project is being constructed as a direct federal action under authority of Section 205 of the 1948 Flood Control Acts. King County is the project's local sponsor and applicant. Permits and approvals required by federal law are obtained directly by the Corps of Engineers. State and local permits and approval are obtained by the local sponsor for and on behalf of the Corps of Engineers.

to under take the following development:

The Army Corps of Engineers Snoqualmie River at Snoqualmie Flood Damage Reduction Project, in accordance with Plans and Specifications dated July 6, 2001, and received by the City January 11, 2002.

The above referenced project consists of the following elements:

Right Bank Channel Widening:

On the right bank of the Snoqualmie River between the SR 202 bridge and Snoqualmie Falls, within the Urban Riverfront Environment, about 340 linear feet of a bank outcrop of bedrock would be excavated for widening the channel for the purposes of increasing hydraulic conveyance to reduce upstream flooding. The excavation would disturb approximately 0.2 acres above the ordinary high-water level

(OHWL) and 0.5 acres below OHWL. Approximately 10,704 cubic yards of rock and soil would be removed. An existing private Puget Sound Energy access road would be re-located approximately 10 feet landward to accommodate the space required for the right-bank channel widening. The finished slopes will be roughened to provide hydraulic cover for fish. Soil pockets approximately 20 feet apart will be excavated into the bedrock to provide for native tree and shrub plantings.

Left Bank Channel Widening:

On the left bank of the Snoqualmie River between the SR 202 bridge and Snoqualmie Falls, within the Conservancy Environment, about 475 linear feet of shoreline would be excavated for widening the channel for the purposes of increasing hydraulic conveyance to reduce upstream flooding. The excavation would disturb approximately 0.9 acres above the OHWL and 1.2 acres below the OHWL. Approximately 21,029 cubic yards of soil would be removed. The cut slopes would then be stabilized with 6,388 cubic yards of derick stone, 616 cubic yards of rock riprap and an additional 740 cubic yards of quarry spalls. Approximately 1195 cubic yards of soil will be used for plantings within the derick stone. Large woody debris (tree stems with root wads) will be anchored to the toe of the excavation. Native plantings will be established on the newly sloped banks to provide shade, cover and food sources to fish and wildlife as well as to provide aesthetic benefits.

Additionally, approximately 400 lineal feet of SE 69th Street (a minor access road that transitions to a private driveway for the Snoqualmie Falls hydroelectric facilities) and utilities, both overhead and underground, will be re-located landward approximately 15 feet to accommodate the space required for the left bank channel widening.

Right Bank Erosion Control Revetment:

A rock revetment would be located along approximately 260 feet of the right bank just upstream of the SR-202 bridge within the Conservancy Environment to prevent damage to critical infrastructure, including the City's sewage treatment plant and Mill Pond Road, from further erosion of the bank due to the increased stream velocities generated by the project. The revetment would entail excavating 1230 cubic yards of existing soil for a trench for locating the riprap and placing 780 cubic yards of riprap within the trench. The revetment will be covered with 450 cubic yards of native soil and the disturbed area replanted with native plantings. The buried revetment will be set back from the shoreline to preserve the existing shoreline vegetation to the greatest extent possible.

Railroad Bridge Removal:

An abandoned and partially destroyed 180 foot-long steel-truss railroad bridge within the Conservancy Environment would be removed to prevent future log and debris jams that could decrease flood conveyance. A 75 foot-long left-bank approach trestle and a 750 foot-long right-bank approach trestle would also be removed. A temporary access road would be built from SR-202 to the left-bank approach trestle to facilitate its removal and to serve as a staging area for a crane to be used to remove the bridge and approach trestle. The areas disturbed for the access road and crane would be re-planted with native species after construction. The right-bank approach is outside of the City of Snoqualmie, under King County's jurisdiction, and is therefore not a part of this application.

upon the following property:

The proposed project is located within the river channel and along the banks of the Snoqualmie River just upstream of Snoqualmie Falls in the City of Snoqualmie and its Urban Growth Area (King County). The downstream end of the project is approximately 500 feet upstream of Snoqualmie Falls, approximately at river mile (RM) 40.3. The upstream end of the project is approximately where Northern Street (if extended) would cross the river channel, near RM 41.0. All of the project actions

except the Right Bank railroad bridge trestle approach and part of the railroad bridge removal are within the City of Snoqualmie. Those portions of the project that are not within the City are in unincorporated King County and are not subject to the City's Shoreline Master Program or other City regulations. The left bank excavation and channel widening and the right bank erosion control revetment are within the Conservancy Environment and the right bank excavation and channel widening is within the Urban Riverfront Environment.

Within the Snoqualmie River and/or its associated wetlands:

The project site is located within the river channel and along the banks of the Snoqualmie River, a shoreline of statewide significance (RCW 90.58.030)).

PART 2: ANALYSIS AND FINDINGS:

In accordance with SMC 19.08.240 (Permit Review), section B, and WAC 173-27-130(3)(b) the Shoreline Administrator makes the following findings and conclusions:

Compliance with Procedural Requirements

- 1) A Joint Aquatics Resource Permit Application (JARPA) was submitted to the City of Snoqualmie by King County Department of Natural Resources on January 4, 2002, seeking a Shoreline Substantial Development Permit for the U.S. Corps of Engineers Snoqualmie River at Snoqualmie Flood Damage Reduction Project.
- 2) The City determined the JARPA, as supplemented, constituted a complete application for a Shoreline Substantial Development permit and issued a Statement of Completeness for Shoreline Permit Application 00-08, Snoqualmie River at Snoqualmie Flood Damage Reduction Project on January 9, 2002.
- 3) A Notice of Application was published in the Snoqualmie Valley Record, the City's official newspaper, on January 17 and 24, 2002, soliciting public comment on the application.
- 4) Comments were received and considered, and are on file with the City of Snoqualmie.

Compliance with SEPA, Sensitive Areas Ordinance and Endangered Species Act

- 5) The federal action by the Corps of Engineers is subject to the National Environmental Policy Act (NEPA). A Detailed Project Report and Environmental Assessment, including a Finding of No-Significant Impact under the National Environmental Policy Act (NEPA) was issued by the US Army Corps of Engineers for the proposed project on December 22, 1999, as the Corps' compliance with NEPA.
- 6) The City adopted the Corps of Engineers' NEPA Environmental Assessment and Finding of No Significant Impact (FONSI) pursuant to WAC 197-11-610(2) on January 7, 2002, as the City's compliance with the State Environmental Policy Act (SEPA) for all City actions in connection with the project.
- 7) The Snoqualmie River is a Class 1 stream pursuant to the City's Sensitive Areas Ordinance (SAO), chapter 19.12 SMC. Class 1 streams require a 100' buffer. The SAO prohibits alteration of sensitive areas and buffers, but provides for granting an exception for certain public agency actions. A Public Agency Exception for the proposed construction within a sensitive area and associated buffers was approved with conditions by the Hearing Examiner on January 28, 2002. The Shoreline

Substantial Development Permit should be conditioned upon compliance with all conditions of the Public Agency Exception. The Public Agency Exception is attached hereto and the findings and conditions thereof are incorporated in this permit as if set forth at length.

- 8) The SAO also prohibits the alteration of wetlands and wetland buffers. No wetlands are located within the project boundaries, except the area underneath the railroad trestle in King County. The Corps concluded that the relatively small decrease in occasional winter overbank flooding resulting from our project would not impact wetlands in the general Snoqualmie area. The project will change only the crest elevations of flood events, such as the two year flood event or greater. Water levels between flood events would not change, and therefore wetlands would suffer no impact from the project.
- 9) The US Army Corps of Engineers has conducted consultations with the applicable services pursuant to Section 7 of the Endangered Species Act. Project approval was granted by the U.S. Fish and Wildlife Service on November 1, 2001. Project approval by the National Marine Fisheries Service is pending, and this Substantial Development Permit should be conditioned upon obtaining such approval prior to commencement of construction.
- 10) The proposed development must comply with all applicable requirements of the Snoqualmie Municipal Code. In addition to this shoreline permit and sensitive areas review, the project will require the following additional permits from the City of Snoqualmie:
 - a) *Flood Improvement Permit for development of lands within the areas of special flood hazard*
 - b) *Clearing and Grading Permit, including temporary erosion and sedimentation control plan approval.*
 - c) *Demolition Permit (railroad bridge removal).*

Requirement for Shoreline Permit

- 11) As a direct federal action by the Corps of Engineers under authority of Section 205 of the 1948 Flood Control Act, the Corps project is subject to the federal Coastal Zone Management Act.
- 12) The State Shoreline Master Program, including the City of Snoqualmie's Shoreline Master Program, has been incorporated into Washington's approved Coastal Zone Management Plan.
- 13) A City of Snoqualmie Shoreline Substantial Development Permit has been determined necessary to determine the consistency of the project with the State Shoreline Master Program and with the State's Coastal Zone Management Plan.
- 14) The standard applicable to direct federal actions is that the federal action must be consistent to the maximum extent practicable with the Shoreline Management Act.

City of Snoqualmie Shoreline Master Program

- 15) The City of Snoqualmie Shoreline Master Program (Master Program) was approved by the Department of Ecology August 16, 1974, and revisions were approved December 16, 1986, and August 18, 1992.
- 16) The most recent substantive revisions were adopted by the City in 1984 and approved by the Department of Ecology in 1986. This revision added the newly annexed Snoqualmie Falls area and extensively amended substantive policy provisions. The 1992 revisions added the recently annexed waste water treatment plant site to the Master Program and revised the location of the Conservancy

Environment to include the newly annexed territory, without making any other revisions to the substantive policy provisions.

Consistency of Project with Allowable Uses by Environment and General Shoreline Use Regulations of Master Program

- 17) The Master Program includes a flood control element at page 11, but does not list flood control projects, excavation or dredging as allowable uses within the allowable uses by shoreline environments as set forth on pages 14 and 15. Neither excavation nor dredging is addressed in the allowable uses within the shoreline environments but shoreline protection is permitted as a conditional use in the Urban Riverfront Environment. This creates vagueness or ambiguity with respect to flood control projects which requires the Master Program to be construed to give effect to the intent of the City in adopting the Master Program in 1984.
- 18) General use regulations by type of use are set out in the Master Program between pages 15 and 24 inclusive. None of the components of the proposed flood control project is explicitly prohibited in the general use regulations of the Master Program, although the general use regulations address both dredging and shoreline protection as separate activities.
- 19) Dredging is addressed at page 20 of the Master Program, and is defined as removal of earth from the bottom of the water body for the purposes of deepening a navigational channel or to sustain use of the bottom materials for land fill. Dredging is not listed as an allowable use in any shoreline environment. The excavation which will occur as part of the channel widening constitutes dredging as defined in the Master Program, as the channel will be both widened and deepened. The regulation contemplates that dredging might occur even in the Natural Environment, as the regulation states "Any dredging done in the river in the natural environment must comply with all existing permits and laws regulating such a use at the local, county, state and federal level." The regulations for the Natural Environment are more restrictive than for the Conservancy Environment.
- 20) Shoreline protection is addressed at pages 20 and 21 of the Master Program, and is defined as activities to reduce overbank flow of high waters and stabilize stream banks. The regulation provides that riprapping, channelization and other methods of bank stabilization shall be controlled by the appropriate authorities, compliance with all existing laws and permits shall be required, and planting of natural vegetation shall be encouraged. All elements of the flood control project include shoreline protection. Shoreline protection is allowed only in the Urban Riverfront Environment, and then only as a conditional use.
- 21) The City of Snoqualmie has experienced recurring severe flooding problems, with major flood events occurring in 1959, 1975, 1986 and 1990 causing millions of dollars of damage, and less severe flood events occurring on a more frequent periodic basis, the most recent floods causing significant property damage in 1995 and 1996, both of which were federally declared disasters.
- 22) The main purpose of construing vague or ambiguous regulations is to give effect to the intent of the legislative body adopting the regulation. To accomplish that, a principal rule of construction is that the regulation is to be read as a whole and effect given to all parts, so that no part is rendered superfluous.
- 23) The local Shoreline Hearings Board and City Council were well aware of the City's flooding problems in 1984. The local Shoreline Hearings Board and City Council intended the flood control element to be given effect and not to be superfluous. Analyzing a flood control project by its separate component parts, such as excavation, dredging and shoreline protection, would restrict the location of flood control projects to the Urban Riverfront Environment, since flood control projects necessarily include shoreline stabilization. It cannot be presumed that the intent of the Master Program was to

limit the location of flood control projects to the Urban Riverfront Environment. Restricting shoreline stabilization to the Urban Riverfront Environment, on the other hand, is consistent with stand-alone shoreline stabilization projects to protect property against bank erosion, since the most intense development within the historic City is located within the Urban Riverfront Environment.

- 24) The only construction of the Master Program that adequately resolves the vagueness or ambiguity created by including a flood control element in the Master Program but not providing for it as an allowed use in any shoreline environment, is that flood control projects are an allowed use in all environments, subject to meeting the policies of the flood control element, and the provision for shoreline protection only in the Urban Riverfront Environment applies only to stand-alone shoreline protection activities and not to flood control projects. This construction of the Master Program is consistent with community views, both in 1984 and at present.
- 25) Based upon the foregoing construction of the Master Program, the proposed flood control project is consistent with the allowable uses within the shoreline environments and the general use regulation, if the proposed project is consistent with the flood control element.

Consistency of Project with Flood Control Element

- 26) The flood control element of the Master Program set forth on page 11 contains one objective and four policies. The objective of the flood control element is to ensure that flood control works are in the public benefit. The estimated flood reduction benefit is approximately 1.2 feet downtown. In 1990, approximately 60% of the structures in historic Snoqualmie had flood waters above their first floors. Much of this damage would not have occurred had the flood elevation been a foot lower. The public benefit of the project is extensively analyzed in the Detailed Project Report and Environmental Assessment. The most recent analysis of the cost to benefit ratio is 1 to 3.9, meeting the Corps of Engineers' test for public benefit. Reducing the loss from damage to public and private property and reducing public safety hazards from severe flood events is in the public benefit.
- 27) Assessment of the public benefit must also include consideration of the downstream impacts of the flood control project. The Detailed Project Report and Environmental Assessment analyzed downstream impacts, and concluded that the maximum downstream impact was an estimated one inch rise in the elevation of the one hundred year flood at its peak, essentially a minor change in the hydrograph for the one hundred year flood. This effect diminishes further downstream and is not detectable at Carnation. The Corps concluded this was not a significant impact, but the Corps, King County and the City have included a downstream mitigation program to be administered by King County to assist potentially affected homeowners elevate their residences. The total amount to be expended for the downstream mitigation program is Three Hundred Twenty-eight Thousand Five Hundred Dollars (\$328,500). The project as proposed includes sufficient mitigation for any downstream impacts.
- 28) Policy 1 of the flood control element requires an environmental assessment on any flood control project. A Detailed Project Report and Environmental Assessment was prepared by the Corps of Engineers and issued by the Corps of Engineers, meeting the requirement of this policy. The Report includes a Finding of No Significant Impact.
- 29) Policy 2 requires flood control projects to be designed to maximize open space elements which are not subject to extensive flood damage, such as parks and agriculture. The proposed project neither increases nor decreases the quantity of any open space elements. The nature and location of the channel widening portions of the do not afford any opportunity to affect the quantity of open space compared for example to overbank excavation.

- 30) Policy 3 requires that flood control works be designed to minimize negative and maximize positive impacts on the natural environment and wildlife habitat. The project proposes to preserve existing vegetation where feasible and to revegetate with native species where existing vegetation will be removed. A landscape enhancement plan (new plantings in a ratio of three to one for each existing tree removed) should be required. The project includes features designed to mitigate its impacts to wildlife habitat, including providing large-woody debris and roughened cuts in the bank for increasing in-stream fish habitat, and the construction of a raptor nest pole for mitigation of the loss of an existing raptor nest. With enhancement measures and the mitigation features included in the design, the proposed flood control project is consistent with this policy.
- 31) Policy 4 provides that flood control works shall be designed so as to minimize harsh, unnatural appearances. The Detailed Project Report and Environmental Assessment proposes mitigation for the aesthetic impacts of the loss of native vegetation and the potential harsh, unnatural appearance of the excavated banks, by re-planting the left and right bank channel widening sections with native vegetation. As noted in finding 35, a landscape enhancement plan should be required, which will soften the appearance of the banks and restore a more natural appearance and ecological function. The removal of the existing shoreline vegetation at the left bank channel excavation site and re-location of SE 69 street toward the existing electricity substation will result in the loss of visual screening of the substation. The City of Snoqualmie Hearing Examiner, in approving the required Public Agency Exception to the Sensitive Areas regulations required that the loss of vegetative screening adjacent to the substation be replanted in accordance with a plan prepared by the applicant and approved by the City. This condition should also be a condition of this permit.
- 32) Based on the foregoing findings, the proposed flood control project as conditioned is consistent with the objective and policies of the flood control element.

Consistency with Conservation Element

- 33) The Conservation Element of the Master Program set forth on pages 10 and 11 contains three objectives with underlying policies for the preservation of the natural shoreline resources. The objectives and policies of the Conservation element are applicable because the project will affect the natural resources of the shoreline.
- 34) Objective 1 of the Conservation Element addresses the preservation and restoration of the natural resources of the shoreline. The proposed project is consistent with this objective, evaluated in the findings below.
- 35) Policy 1 of Objective 1 of the Conservation Element requires that the natural flora be preserved or restored when appropriate. The proposed project is consistent with this policy by preserving the natural flora where possible and restoring vegetation to the bank areas to be excavated where possible, with maintenance to ensure its survival. The Corps of Engineers landscape planting plan identifies the proposed species and spacing for different areas of the project, but does not include a plan view. The Corps of Engineers should submit a plan view of the landscape planting plan showing densities and species, to be reviewed and approved by the City of Snoqualmie prior to commencement of construction.
- 36) The quantity of vegetation to be removed, along with the proposed mitigation for the loss of this vegetation, is described below, for each project area.
- a) Right Bank Channel Widening: The right-bank excavation will result in the loss of about 0.2 acres of forest. The majority of the land within the right-bank excavation site contains little or no vegetation, as it is mostly a disturbed area with an access road and solid bedrock. Mitigation proposed for the loss of forest cover in the right-bank channel excavation section includes the excavation of soil pockets approximately 20 feet apart within the bedrock to plant trees and

shrubs to provide shading and habitat. These soil pockets will allow for vegetation and its associated environmental benefits where vegetation did not exist previously due to the presence of exposed solid bedrock at the site. These proposed measures were included in the conditions of approval in the Public Agency Exception to the City of Snoqualmie Sensitive Areas Regulations, granted by the City's Hearing Examiner on January 28, 2002, and should also be conditions of approval of this shoreline permit.

- b) **Left Bank Channel Widening:** The left-bank excavation would result in the loss of about 0.9 acres of forest adjacent to the river channel. Mitigation proposed for the loss of bank habitat and forest cover in the left-bank channel excavation section includes replanting with native vegetation. The proposed vegetation will be located in layers of soil within the riprap from the ordinary high-water level (elevation 400) to approximately elevation 415 on the bank, and directly within the topsoil above approximately elevation 415. Where riprap exists above elevation 405, the applicant proposes covering the riprap with soil to facilitate vegetation establishment in accordance with a recommendation from the US Fish and Wildlife Service. This action was not identified on the plan set received by the City, and therefore should be a condition of approval of this shoreline permit. Additionally, a 12-foot wide bench will be located at elevation 405 for additional tree and shrub plantings. Species to be used include a mixture of native grasses, shrubs and trees suitable to the site and occasional flooding conditions, in accordance with the landscape planting plan. These proposed measures were included in the conditions of approval in the Public Agency Exception to the City of Snoqualmie Sensitive Areas Regulations, granted by the City's Hearing Examiner on January 28, 2002, and should also be conditions of approval of this shoreline permit.
- c) **Right Bank Erosion Protection Site:** To preserve the valuable native vegetation immediately adjacent to the shoreline, the rock revetment just upstream of the SR-202 Bridge will be placed within a trench set back from the shoreline. The construction of the revetment will result in the disturbance of about 0.1 acre of existing vegetation. The area where vegetation will be lost is currently of low value to wildlife as it consists largely of Himalayan blackberry. After the revetment has been located in the trench, topsoil will be placed over the revetment and native species replanted, providing sufficient mitigation for the loss of the vegetation. Because of the presence of Himalayan blackberry at and adjacent to this site, it is particularly important that maintenance of the native plantings occur for at least five years to prevent the blackberry and other aggressive non-native species from encroaching before the native plantings can become sufficiently established. These proposed measures were included in the conditions of approval in the Public Agency Exception to the City of Snoqualmie Sensitive Areas Regulations, granted by the City's Hearing Examiner on January 28, 2002, and should also be conditions of approval of this shoreline permit.
- d) **Railroad Bridge Removal Site:** The removal of the railroad bridge and left bank approach trestle will disturb approximately 0.2 acre of existing vegetation for a temporary access road used for accessing the site and placing a crane used to remove the bridge and approach trestle. The area of disturbance is on top of the old railroad bed, and consists primarily of Himalayan Blackberry, of low value to wildlife. Proposed mitigation for the clearing for the railroad bridge removal site includes replanting all disturbed areas of the site with native vegetation in accordance with the landscape planting plan. This proposed measure was a condition of approval in the Public Agency Exception to the City of Snoqualmie Sensitive Areas Regulations, granted by the City's Hearing Examiner on January 28, 2002, and should also be a condition of approval of this shoreline permit. Clearing associated with removal of the right bank approach trestle is outside of the Snoqualmie City limits and is therefore not subject to the City's Shoreline Master Program.

- e) Replanting Maintenance: The Detailed Project Report and Environmental Assessment proposes maintenance to ensure the plantings become successfully established, including watering for the first year and removal of exotic species for a period of five years that may also try to establish themselves before the native vegetation can become sufficiently established. This proposed measure was a condition of approval in the Public Agency Exception to the City of Snoqualmie Sensitive Areas Regulations, granted by the City's Hearing Examiner on January 28, 2002, and should also be a condition of approval of this shoreline permit. The exact specifications regarding the protection, maintenance and watering of the vegetation should be created in a Vegetation Maintenance Plan, to be developed with and approved by the US Fish and Wildlife Service. This plan should additionally provide measures to protect the newly planted trees and shrubs against browsing from deer, rodents, and other species.
- 37) Policy 2 of Objective 1 of the Conservation Element requires that the natural topography in undeveloped shorelines not be substantially altered without an approved plan that assures mitigation of impacts to these sensitive areas. The applicant has submitted a set of drawings, received by the City November 13, 2001, detailing the proposed construction measures, including proposed revisions to the existing topography consisting of the cuts and fills associated with the channel widening and bank protection elements. These drawings, together with the conditions of approval for the Public Agency Exception to the City's sensitive areas regulations, granted by the Hearing Examiner on January 28, 2002, and the conditions of this shoreline permit, constitute the approved plan to assure mitigation of impacts to the sensitive area from alterations to the natural topography. The proposed project will also require a clearing and grading permit pursuant to SMC 15.20.030, demonstrating conformance with the City's clearing and grading regulations.
- 38) Objective 2 of the Conservation Element addresses the preservation and restoration of the natural state of the rivers for the protection of wildlife habitat, fishery resources, beaches, natural vegetation and other fragile elements. The project is consistent with this objective.
- 39) Policy 1 of Objective 2 of the Conservation Element states that aquatic habitats, spawning grounds, and wildlife habitat shall be protected, improved, and if feasible, increased. The proposed project is consistent with this policy through the proposed mitigation measures, below.
- a) The construction of the project will affect aquatic habitats by eliminating some trees, which currently overhang and occasionally fall into the river channel, providing woody debris, which serves as in-stream cover for fish. This in-stream cover is important for providing resting, feeding, and sheltering habitat areas for fish. Mitigation proposed to reduce the impact of loss of bank complexity includes creating irregularities in the geometry of the rock cuts along the entire length of the right bank excavation and the placement of large woody debris along the left bank excavation area. The irregular rock cuts along the right-bank will provide small alcoves and back-water areas for fish refuge. Large woody debris will be placed along the left bank channel widening area, consistent with recommendations from the US Fish and Wildlife Service. The large woody debris along the left bank will consist of double root wads of conifers with stems at least 24 inches in diameter, placed every 30 feet, and will create additional refuge areas for fish in addition to helping to anchor the bank. The rock cuts and placement of large woody debris will improve the aquatic habitat available at the site by creating more channel complexity and in-stream cover than what exists currently.
 - b) The proposed project will have short-term impacts on aquatic habitats and fish due to some blasting of bedrock required for the channel excavations and temporary sedimentation. In-water construction will occur from July 1 through September 15, during the low-flow period of the river, to minimize impacts to fish from in-stream sedimentation from the project, which period may be extended depending on weather conditions. Erosion and sedimentation control is

described in subsequent findings. The charges from this blasting can cause temporary disturbance, injury, and/or mortality to fish within the river channel. The Detailed Project Report and Environmental Assessment proposed using a bubble curtain to discourage fish from swimming near the blasting area. It was later determined that the bubble curtain would not sufficiently prevent fish from entering the blasting area. In place of the bubble curtain, the proposed mitigation planned to reduce the impacts of blasting charges on fish is the placement of an in-stream net to prevent fish from entering the blasting area. Fish located within the net when the net is placed will be electroshocked and removed from the netted area prior to blasting. This proposed mitigation was included as a condition of approval in the Public Agency Exception to the Sensitive Areas Regulations, approved by the City's Hearing Examiner on January 28, 2002, and should also be a condition of approval for this shoreline permit.

- c) The project will affect wildlife habitat by the removal of the damaged railroad bridge as a part of the project, which will result in the removal of an existing osprey nest located on the railroad bridge. Proposed mitigation for the loss of the nest is the construction of a raptor pole at the project site for use by the bird(s) for nesting. At the time of the hearing for the Public Agency Exception to the Sensitive Areas regulations, testimony was given that the proposed location of the raptor nest may be inappropriate due to the close presence of the road and alternative locations were suggested at the site. The Hearing Examiner added a condition to the approval of the Public Agency Exception that the location of the raptor nest be reviewed further by the applicant based upon the comments received at the hearing and that the final location of the pole be submitted to the City for review and approval prior to installation. That condition should also be a condition of approval for this shoreline permit.
 - d) For mitigation of the loss of existing wildlife habitat in the area of existing vegetation on the left bank widening site, the applicant proposes placing soil over the riprap at the upstream end of the site where it joins the recently constructed drainage channel to create a more natural passage corridor for wildlife, in accordance with a recommendation from the US Fish and Wildlife Service. Because this action was not included in the plan set or plan specifications submitted to the City, this should be included as a condition of approval in this shoreline permit. Consistent with the US Fish and Wildlife Service recommendation, the corridor should be at least 15 feet wide and completely cover the riprap from the toe to the top of the riprapped slope. The corridor should be designed with the US Fish and Wildlife Service and identified on the Landscape Planting Plan to be submitted to the Washington State Department of Ecology.
- 40) Objective 3 of the Conservation Element addresses the prevention of deterioration of water quality and encourages water quality improvement. The proposed project will require Water Quality Certification from the Washington State Department of Ecology, which will include conditions required for the protection of water quality. Compliance with all conditions of the Water Quality Certificate should be a condition of this permit.
- 41) The proposed project is additionally consistent with Objective 3 of the Conservation Element by preventing the short-term deterioration of water quality through the proposed mitigation measures. Construction of the project will cause short-term turbidity and sedimentation impacts in the project vicinity and along the channel downstream from the blasting and excavation activities. The project will not result in any long-term deterioration of water quality. Mitigation planned to reduce the short-term impacts of turbidity and sedimentation to downstream habitat includes the use of best-management practices, including the construction of temporary silt curtains within the river channel to minimize the loss of suspended sediments from the channel widening sites. This proposed mitigation was included as a condition of approval in the Public Agency Exception to the Sensitive Areas Regulations, approved by the City's Hearing Examiner on January 28, 2002, and should also be a condition of approval for this shoreline permit. Additionally, the applicant proposes using

erosion control matting and sediment traps to prevent exposed soil from washing into the river. The exact specifications for measures to protect against erosion and sedimentation will be established in an erosion and sedimentation control plan.

- 42) Policy 1 of Objective 3 of the Conservation Element requires that no additional untreated effluent or other pollutants be discharged into the rivers (without prior specific license by the City of Snoqualmie.) The proposed project will not discharge untreated effluent or other pollutants into the river.
- 43) Objective 3, Policy 2 of Objective 3 of the Conservation Element requires the City and other government agencies to aggressively enforce all governmental water quality regulations. The proposed project will require numerous permits and approvals at the state and federal level pertaining to the protection of water quality, including Water Quality Certification by the Washington State Department of Ecology, Hydraulic Project Approval by the Washington State Department of Fish and Wildlife, National Marine Fisheries Service Approval for Concurrence with the Endangered Species Act, and Section 404 Approval by the Army Corps of Engineers.
- 44) Based on the foregoing findings, the proposed flood control project as conditioned is consistent with the objective and policies of the Conservation Element.

Consistency of Project with Other Applicable Master Program Elements:

- 45) The Economic Development Element set forth on pages 6 and 7 of the Shoreline Master Program is for the location and design of industries, transportation facilities, tourist facilities, commercial and other developments that are particularly dependent on shoreline locations. The policies of the Economic Development Element do not apply to this project, as it does not relate to the location and design of the uses listed. To the extent the element addresses development that is particularly dependent on shoreline locations, as a flood control project, the project is dependent upon its shoreline location.
- 46) The Circulation Element set forth on page 8 of the Shoreline Master Program is for assessing the location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public facilities and correlating these facilities with the Shoreline Use Element. The policies of the Circulation Element do not apply to this project, as it does not relate to the construction of the uses listed, with the exception of the minor road re-locations for SE 69th Street and the Puget Sound Energy access road.
- 47) The Historical/Cultural Element set forth on page 11 of the Shoreline Master Program is for the protection and restoration of buildings, sites and areas having historic, cultural, educational or scientific values. The element contains one objective encouraging the restoration, development, and interpretation of historic cultural and education sites. The proposed project is adjacent to the historic Snoqualmie Falls powerplant buildings, but will not alter these facilities. The project site is known to be part of an area of cultural and religious significance to the Snoqualmie Tribe. If any burial sites or Native American artifacts are found during construction, construction activity should immediately cease, the Snoqualmie Tribe should be notified and referral should be made to the State Historic Preservation Officer.
- 48) The Public Access Element, set forth on page 7 and 8 of the Shoreline Master Program is for assessing the need for providing public access to shoreline areas. The policies of the Public Access Element, generally do not apply to this project, as it is not intended as a use for facilitating public access to the shoreline. Policy 1 of the Public Access Element requires that publicly owned shoreline areas be provided with public access to the water's edge where feasible. Providing public access is not feasible or appropriate for the proposed project due to public safety considerations. The shoreline at the project site is a steep bank, is just upstream from Snoqualmie Falls, and has adjacent hydropower intake facilities.
- 49) The Recreational Element, set forth on page 8 and 9 of the Shoreline Master Program, addresses the preservation and expansion of recreational opportunities in the shoreline area. The policies of the Recreational Element generally do not apply to this project, as it is not a recreational facility or otherwise intended to provide recreational opportunities in the shoreline area, with the exception of policy 4, which has been included to address project impacts to private property.
- 50) Policy 4 of the Recreational Element requires that any public development adjacent to private property be designed to protect the rights and privacy of the private property owners. The proposed project will involve blasting and heavy drilling to remove bedrock for the right-bank and left-bank channel widening. This blasting and drilling, if not properly conducted, could interfere with the privacy and potentially damage the property of adjacent property owners, including the Salish Lodge and Puget Sound Energy, as follows:
- a) Blasting and heavy drilling could cause loud noise, which could disturb the privacy of guests of the Salish Lodge. To minimize audible disturbance to adjacent private property owners and guests of that property, blasting and heavy drilling should be limited to 9:00 a.m. to 5:00 p.m.

Monday through Friday and 11:00 a.m. to 5:00 p.m. on Saturday. Blasting and drilling activities should not be permitted on Sunday.

- b) Blasting could potentially damage private property through vibration. Additionally, property could be potentially damaged by flyrock from the blasts, particularly at the right-bank blasting area adjacent to the Salish Lodge employee parking lot and Puget Sound Energy facilities. The Project Specifications, received by the City January 11, 2002, contain extensive requirements for an Operational Blasting Plan to be developed by the contractor. These requirements include pre and post-blasting surveys to identify any damage to property from the blasting activities and required actions to minimize potential damage to private property, including measures to control vibration and flyrock. All blasting activities should conform to the requirements of the Operational Blasting Plan identified in the Project Specifications Document.
- 51) The Shoreline Use Element set forth on page 9 and 10 of the Shoreline Master Program is intended for coordinating shoreline land uses with the Comprehensive Plan, with the objective of the Element calling for adherence to the land uses as set forth in the Comprehensive Plan. The Snoqualmie Vicinity Comprehensive Plan designates the landward areas of the project site as follows: The Right Bank Channel Widening area and Right Bank Erosion Protection Area are designated Utility Park. The Left Bank Channel Widening Area is designated for Utility Park and Mixed Use. The Left Bank Bridge Removal Area is designated Parks and Open Space. The Comprehensive Plan does not contemplate Flood Control Projects as a land use to be regulated by zoning.
- 52) Policy 1 of the Shoreline Use Element requires that the best possible pattern of land and water uses that will be most beneficial to the natural and human environment be promoted. The proposed project is consistent with the policy by providing significant benefit to residents of the floodplain within the City of Snoqualmie and surrounding area through lower flood depths during a flood event, while utilizing a flood control method that has less environmental impacts than other alternatives considered, with mitigation proposed for impacts to the sensitive area.
- 53) Policy 2 requires the minimization of non-water oriented uses and uses which would adversely affect the shoreline environment. The use is a flood control project, a water-dependant use. Please see the findings under the Review for Consistency with Conservation Element, above, for impacts of the proposed project on the shoreline environment and proposed mitigation to address those impacts.
- 54) Policy 3 requires that potential long-term effects on the shoreline take precedence over short-term economic gain or convenience in development. The proposed project is not intended for economic gain or convenience. The project has minimal long-term impacts on the shoreline and proposes mitigation for those impacts. Please see the findings under the Review for Consistency with Conservation Element, above, for impacts of the proposed project on the shoreline environment and proposed mitigation to address those impacts.

Consistency with Other Shoreline Master Program Use Regulations

- 55) The proposed flood control project includes elements of landfill, dredging, and shoreline protection. The Shoreline Master Program contains use regulations pertaining to these features, as detailed in the findings below.
- 56) Landfill is addressed on page 19 and 20 of the Shoreline Master Program and is defined as the creation of dry upland areas by filling or depositing of sand, soil, or gravel into a wetland area. Landfill is permitted within the shoreline area when five standards as follows are met. The proposed project is consistent with these standards.

- 57) Standard 1 of the Landfill Shoreline Use Regulations requires that priority be given to landfills for water-dependent uses and for public uses. The proposed project is consistent with this requirement as both a water-dependent use and a public use.
- 58) Standard 2 of the Landfill Shoreline Use Regulations prohibits dredging for fill materials only. The dredging and channel excavation associated with the proposed project is for the primary purpose of increasing hydraulic conveyance to reduce flood depths during a flood event. The dredging and channel excavation is not being conducted for the purpose of obtaining fill materials.
- 59) Standard 3 of the Landfill Shoreline Use Regulations requires that fill material be of such quality that it will not cause problems of water quality. The project specifications contain numerous required provisions regarding the materials to be used for landfill. The fill materials to be used in the proposed project will include the existing material removed from other portions of the site for the channel excavations, and clean material purchased from commercial quarries. No material to be used will be of such quality that it will cause problems of water quality.
- 60) Standard 4 of the Landfill Shoreline Use Regulations requires that shoreline fills or cuts be designed and located so that significant damage to existing ecological values or natural resources, or alteration of local currents, will not occur, resulting in the damage to adjacent life, property or natural resource systems. Shoreline cuts and fills are a part of the proposed flood control project, and are described in the findings below.
- a) The shoreline cuts associated with the channel excavations have been designed and located to increase hydraulic conveyance during a flood event to reduce flood depths within the floodplain. The increased hydraulic conveyance during a flood event is also associated with increased in-stream velocities in the project area. These increased velocities will potentially result in increased erosion during a flood event at the right-bank of the river, where the channel bends to the west just upstream of the SR-202 Bridge. Erosion during a flood event could threaten existing critical facilities, including Mill Pond Road and the City's sewage treatment plant. To protect these facilities against potential erosion during a flood event, the project includes a rock revetment, buried in the bank approximately 50 feet landward of the ordinary high-water mark. The rock revetment ensures that the project's affect of increasing local currents during a flood event does not result in damage to adjacent life, property or natural resource systems and is therefore consistent with standard 4.
 - b) The cut and fill associated with the rock revetment is located approximately 50 feet back from the shoreline in an area consisting of primarily blackberry. As such, the location preserves the more valuable shoreline vegetation as much as possible.
 - c) The proposed fills, consisting of rock riprap, native soil and large woody debris, will be secured such that they will not become dislodged during a flood event resulting in damage to life, property, or natural resource systems. The native soil, where subject to occasional inundation during a flood event, will be anchored in soil pockets within the riprap. The large woody debris will be anchored approximately 20 feet into the bank.
- 61) Standard 5 of the Landfill Shoreline Use Regulations requires that all provisions of the flood hazard regulations be adhered to. The project will have to conform with all applicable provisions of the flood hazard regulations through the required Flood Improvement Permit. SMC 15.20.160(F) states that "no fill shall be permitted except where provision has been made on the subject property to balance the capacity to store floodwaters and accommodate potential surface flow in an amount equal to the amount of floodwater likely to be displaced by the fill." The proposed project balances the amount of fill to be located with a greater amount of material to be excavated and removed from the site.

- 62) Dredging is addressed on page 20 of the Master Program, and is defined as removal of earth from the bottom of the water body for the purposes of deepening a navigational channel or to sustain use of the bottom materials for land fill. The excavation which will occur as part of the channel widening constitutes dredging as defined in the Master Program, as the channel will be both widened and deepened. The regulation states that any dredging done in the river in the natural environment must comply with all existing permits and laws regulating such as use at the local, county, state and federal levels. No dredging associated with the proposed project will occur within the natural environment designation. Dredging associated with the channel excavations must comply with permits and approvals at the state and federal level that apply to dredging, including Section 404 approval by the US Army Corps of Engineers and Hydraulic Project Approval by the Washington Department of Fish and Wildlife.
- 63) Shoreline protection is addressed on page 20 and 21 of the Master Program and is defined as those activities occurring within the streamway and wetland areas which are designed to reduce overbank flow of high waters and stabilize stream banks. Three specifications are called out for shoreline protection, including requiring that rip-rapping, channelization and other methods of bank stabilization be controlled by the appropriate authorities, compliance with existing laws and permits be required, and the planting of natural vegetation be encouraged where bank stabilization has occurred. The proposed project is consistent with these requirements.
- 64) The shoreline protection revetment will be located in a trench approximately 50 feet back from the ordinary high-water mark in an area vegetated predominantly by blackberries to preserve the more valuable vegetation adjacent to the shoreline as much as possible. The Detailed Project Report and Environmental Assessment proposes covering the buried erosion protection revetment with topsoil and re-planting it with native species, consistent with the specifications called out in the Shoreline Protection Shoreline Use Regulations. The applicant has submitted a vegetation plan describing the types and spacing of native species to be planted in this area and other areas of the proposed project to be re-planted. The Detailed Project Report and Environmental Assessment additionally proposes watering the re-planted site for one year and maintaining the site for five years to prevent Himalayan blackberry and other non-native species from re-invading the site. These proposed mitigation measures were made conditions of approval for the project in the City of Snoqualmie Hearing Examiner's approval of the Public Agency Exception to the Sensitive Areas Regulations. These conditions should also be conditions of the Shoreline Permit.

PART 3: CONSISTENCY WITH SHORELINE MANAGEMENT ACT

- 65) The proposed project is consistent with the state policy of the Shoreline Management Act, as it is consistent with the City of Snoqualmie Shoreline Master Program as approved by the Department of Ecology. The project is designed and proposed to be conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area, pursuant to RCW 90.58.020.

PART 4: CONCLUSION

Upon the basis of the foregoing findings, the proposed development is consistent with the Shoreline Management Act and applicable provisions of the Shoreline Master Program, and should be approved, subject to the conditions set forth below.

PART 5: DECISION

The Application of King County Department of Natural Resources on behalf of the U.S. Corps of Engineers for a Shoreline Substantial Development Permit, Application No. SH 00-08, for the *U.S. Army Corps of Engineers Snoqualmie River at Snoqualmie Flood Damage Reduction Project* is hereby APPROVED, provided, DEVELOPMENT PURSUANT TO THIS PERMIT SHALL BE UNDERTAKEN PURSUANT TO THE FOLLOWING TERMS AND CONDITIONS:

1. All construction shall conform to the approved Plans and Specifications dated July 6, 2001, and received by the City January 11, 2002, including all project features and mitigations identified in Detailed Project Report and Environmental Assessment dated December 22, 1999, except as specifically supplemented or modified herein or in any required state or federal permit or approval.
2. All construction shall conform to the conditions of the Clean Water Act Section 401 Water Quality Certification when issued by the State of Washington Department of Ecology, which conditions shall be deemed incorporated herein, including all project mitigations identified therein.
3. All construction shall conform to the conditions of the Hydraulic Project Approval when issued by the Washington State Department of Fish and Wildlife, which conditions shall be deemed to be incorporated herein, including all project mitigations identified therein.
4. All construction shall conform to the conditions of the Public Agency Exception to the Sensitive Areas Regulations, approved by the City of Snoqualmie Hearing Examiner on January 28, 2002, attached hereto and incorporated herein.
5. Pursuant to SMC 15.12.110, the applicant shall obtain a Flood Improvement Permit prior to commencement of construction.
6. Pursuant to SMC 15.20.030, the applicant shall obtain a Clearing and Grading Permit prior to commencement of any clearing and grading activities, including approval of a temporary erosion and sedimentation control plan. Any grading conducted shall be in conformance with SMC 15.12, SMC 15.20 and city approved plans and specifications.
7. Pursuant to SMC 15.04.010 and the Uniform Building Code, the applicant shall obtain a demolition permit prior to removal of the railroad bridge.
8. The Corps of Engineers shall obtain project approval by the National Marine Fisheries Service in compliance with Section 7 of the Endangered Species Act prior to commencement of construction.
9. Where riprap exists above elevation 405 on the Left Bank Channel Excavation site, the riprap shall be covered with soil to facilitate vegetation establishment.
10. The Corps of Engineers shall submit a plan view of the landscape planting plan showing densities and species, to be reviewed and approved by the City of Snoqualmie and Department of Ecology prior to the commencement of construction.
11. The Corps of Engineers shall submit a vegetation maintenance plan to be developed with and approved by the U.S. Fish and Wildlife Service and the Department of Ecology for the protection, watering, and maintenance of all planted vegetation, including measures to protect the newly planted trees and shrubs against browsing from wildlife.
12. All blasting and heavy drilling associated with the project shall occur between 9:00 a.m. to 5:00 p.m., Monday through Friday, and between 11:00 a.m. and 5:00 p.m. on Saturdays. Blasting and heavy drilling shall be prohibited on Sundays.
13. All blasting shall conform to the requirements of the Operational Blasting Plan identified in the Plans and Specifications dated July 6, 2001, and received by the City January 11, 2002, including but not

limited to pre- and post-blasting surveys to identify any damage to property, for which the contractor shall be liable .

14. If any burial sites or Native American artifacts are found during construction, construction activity shall immediately cease, the Snoqualmie Tribe shall be notified and referral shall be made to the State Historic Preservation Officer.
15. The conditions of this permit shall be attached to and incorporated into the contract between the Army Corps of Engineers and each contractor performing the work.
16. This permit is granted pursuant to the Shoreline Management Act of 1971 and nothing in this permit shall excuse the applicant from compliance with any other federal, state or local statutes, ordinances, or regulations applicable to this project, or inconsistency with the Shoreline Management Act (Chapter 90.58 RCW).
17. This permit may be rescinded pursuant to RCW 90.68.140 (7) in the event the permittee fails to comply with the terms of conditions hereof.
18. A Shoreline Permit Revision shall be required before final project approval should the application of other regulations require a substantive revision to the design of the project after issuance of this shoreline permit, pursuant to WAC 173-27-100.

CONSTRUCTION PURSUANT TO THIS PERMIT WILL NOT BEGIN OR IS NOT AUTHORIZED UNTIL TWENTY-ONE DAYS FROM THE DATE OF FILING AS DEFINED IN RCW 90.58.140(6) AND WAC 173-14-090, OR UNTIL ALL REVIEW PROCEEDING INITIATED WITHIN TWENTY-ONE DAYS FROM THE DATE OF SUCH FILING HAVE TERMINATED; EXCEPT AS PROVIDED IN RCW 90.58.140(5) (a) (b) (c).

March 29, 2002

(Signature of Authorized Local Government Official)
Director of Planning and Parks and Shoreline Administrator

The shoreline administrator's decision on this permit has been transmitted to the applicant, the Department of Ecology, and the Attorney General in accordance with RCW 90.58.140(6) and WAC 173-27-130.

THIS SECTION FOR DEPARTMENT USE ONLY IN REGARD TO A CONDITIONAL USE OR VARIANCE PERMIT.

Date received by the department NA

Approved ☐

Denied ☐

This conditional use/variance permit is approved/denied by the department pursuant to Chapter 90.58 RCW.

Development shall be undertaken pursuant to the following additional terms and conditions:

(Date)

NA
(Signature of Authorized Dept. Official)

ssd00-08

Attachment D
City of Snoqualmie
Hearing Examiner
Findings, Conclusions and Decision

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CITY OF SNOQUALMIE
HEARING EXAMINER
FINDINGS, CONCLUSIONS AND DECISION

APPLICANT: King County Department of Natural Resources Water and Land Resources Division

LOCATION: Snoqualmie River from railroad bridge to just above Snoqualmie Falls

APPLICATION: Request for approval of a Pubic Agency Exception to the City of Snoqualmie Sensitive Areas Regulations for the *Army Corps of Engineers Snoqualmie River at Snoqualmie Flood Damage Reduction Project*.

SUMMARY OF RECOMMENDATION AND DECISION:

Staff Recommendation: Approve with conditions

Hearing Examiner Decision: Approve with conditions

PUBLIC HEARING:

After reviewing the official file, which included the Department of Planning and Parks Staff Advisory Report, and after visiting the site, the Hearing Examiner conducted a public hearing on the application. The hearing on the King County application was opened at 2:00 p.m., January 15, 2002, in the Snoqualmie Police Station Conference Room, Snoqualmie, Washington, and closed at 2:56 p.m. Participants at the public hearing and the exhibits offered and entered are listed in this report. A verbatim recording of the hearing is available in the Department of Planning and Parks.

HEARING COMMENTS:

The following persons offered comments at the public hearing:

From the City:

Mike McCarty, Assistant Planner
Pat Anderson, City Attorney

From the Applicant:

Tom Beam, Senior Engineer, Natural Resources Water and Land Resources Division
Michael Scuder, Engineer, Corps of Engineers

From the Community:

Barry Lombard, Municipal Land Planner, Puget Sound Energy
Sam Johnson, General Manager, Salish Lodge
Ben Hodge, Assistant Project Manager, Puget Sound Energy

RECEIVED

JAN 28 2002

CITY OF SNOQUALMIE

Tony Fuchs, Staff Biologist III, Puget Sound Energy
Charles Peterson, resident and former Snoqualmie Mayor

WRITTEN COMMENTS:

Julia Benson, submitted Exhibit C

FINDINGS, CONCLUSIONS AND DECISION:

Having considered the entire record in this matter, the Hearing Examiner now makes and enters the following:

A. FINDINGS AND CONCLUSIONS:

1. The information contained in Parts 1 and 2 of the Planning Department Staff Report (Hearing Examiner Exhibit A), as modified at the hearing, is found by the Hearing Examiner to be supported by the evidence presented during the hearing and by this reference is adopted as a part of the Hearing Examiner's findings of fact. A copy of said report is available in the Department of Planning and Parks.
2. General support was expressed for the proposal; however, some issues were identified by those who attended the hearing and in Exhibit C. Those issues include the following:
 - a. The access road needs to meet standards for Puget Sound Energy vehicles, and will need to be cleared to allow access for Puget Sound Energy vehicles during emergencies.
 - b. Landscape screening near the existing substation will be removed and should be replaced.
 - c. Advance warning of blasting (2 days) is needed to allow Puget Sound Energy time to shut down equipment and vacate the nearby tunnels.
 - d. Blasting hours should be limited to the middle of the day to minimize impact on customers at the Salish Lodge. Also, care should be taken so that fly rock from the blasting does not damage employee's cars at the Salish Lodge employee parking area near the river.
 - e. The wall at the west end of the downstream blasting area is not effective and if the Corps needs to remove any of the wall, it should remove the entire wall.
 - f. Some of the new plantings shown on Attachment 4 to Exhibit A will be flooded if Puget Sound Energy is allowed to rebuild the existing dam and raise the level of the water behind it.
 - g. The existing railroad bridge is an attractive nesting site for Osprey. When the bridge is removed the proposed Osprey pole should be located near the existing railroad bridge site or by Kimball Creek.
3. City staff responded to concerns expressed and indicated a willingness to address and coordinate the issues identified.

4. Following are conclusions of the Hearing Examiner:

- a. The issue of access road standards to satisfy Puget Sound Energy should be coordinated between the applicant and Puget Sound Energy, and the agreed upon road standards should then be submitted to the City for review and approval.
- b. If landscape screening is removed from the area around the existing substation adjacent to SE 69th, it should be replaced according to a plan prepared by the applicant and approved by the City.
- c. The applicant should notify Puget Sound Energy in advance of any blasting to allow Puget Sound Energy to vacate the nearby tunnels and turn off equipment as necessary.
- d. Blasting should be limited to normal construction hours and the applicant should notify the Salish Lodge in advance of all blasting so the Lodge can inform its customers and employees before the blasting begins.
- e. Removal of the wall at the west end of the downstream blasting area is a separate issue that is not before the Examiner as part of this application.
- f. It may be that some of the plantings that are to be planted may be flooded at some time in the future if Puget Sound Energy receives permission to rebuild and raise the existing dam. However, it is unknown at this time when and if that will occur. Therefore, the Landscape Planting Plan should be approved as proposed.
- g. The location of the Raptor Top Nesting Pole should be reviewed further by the applicant based upon the comments received at the hearing and the final location of proposed pole should be reviewed and approved by the City prior to installation.

B. DECISION:

Based upon the foregoing findings of fact and conclusions, the Public Agency Exception to allow construction of the proposed *Army Corps of Engineers Snoqualmie River at Snoqualmie Flood Damage Reduction Project* within the sensitive area of the Snoqualmie River Channel and its associated 100-foot sensitive area buffer, is approved, subject to the following conditions:

1. Mitigation for the loss of vegetation within the sensitive areas and adjacent to the existing substation shall be implemented in the construction of the project as follows:
 - a. The right-bank channel excavation area shall be planted with native vegetation within soil pockets spaced 20 feet apart, graded to drain riverward, as identified on the Army Corps of Engineers Channel Widening Permit Drawings received by the City on November 13, 2001 and as identified on the Landscape Planting Plan.
 - b. The left-bank channel excavation area shall be re-planted with native vegetation as identified on the Army Corps of Engineers Channel Widening Permit Drawings received by the City on November 13, 2001 and as identified on the Landscape Planting Plan.

- c. Disturbed areas of the right-bank erosion protection site shall be re-planted with native vegetation as identified on the Landscape Planting Plan.
 - d. Disturbed areas of the railroad bridge removal site under the City of Snoqualmie's jurisdiction shall be re-planted with native vegetation as identified on the Landscape Planting Plan.
 - e. Loss of vegetative screening adjacent to the existing substation shall be replanted in accordance with a plan prepared by the applicant and approved by the City.
 - f. For one year after planting, all planted areas shall be regularly watered.
 - g. For a period of five years after planting, all planted areas shall be monitored and exotic weed species removed.
2. Mitigation for the loss of large woody debris recruitment and channel complexity within the sensitive areas shall be implemented in the construction of the project as follows:
 - a. Large Woody Debris shall be placed within the left-bank channel excavation area, as identified on the Army Corps of Engineers Channel Widening Permit Drawings received by the City on November 13, 2001.
 - b. The right-bank channel excavation area shall be constructed with irregularities in the geometry of the rock cuts along the entire length of the right bank excavation, as identified on the Army Corps of Engineers Channel Widening Permit Drawings received by the City on November 13, 2001.
 3. Mitigation for the impacts of the increase in turbidity and siltation to downstream habitat within the sensitive areas shall be implemented in the construction of the project as follows:
 - a. The Corps of Engineers shall utilize best-management practices within the river channel to minimize the loss of suspended sediments from the channel widening sites, including the use of silt curtains.
 4. Mitigation for the impacts of project blasting on fish within the sensitive areas shall be implemented in the construction of the project as follows:
 - a. The Corps of Engineers shall work with the National Marine Fisheries Service to develop an in-stream construction site isolation plan to include a temporary fish net or other such device to prevent fish from entering the blasting area. Fish within the net shall be relocated outside of the net prior to blasting.
 5. The applicant shall notify the City, Puget Sound Energy, and the Salish Lodge of any and all blasting that is to take place. Notification shall be a minimum of two (2) days in advance of any and all blasting.
 6. The location of the Raptor Top Nesting Pole shall be reviewed further by the applicant based upon the comments received at the hearing and the final location of proposed pole shall be submitted to the City for review and approval prior to installation.

Dated this 28th day of January 2002.



Ron McConnell, FAICP
Hearing Examiner

APPEALS:

Appeals must be submitted within 14 days after the notice of this decision in accordance with the provisions of Chapter 14.40 SMC. Information regarding the appeal process may be obtained from the Department of Planning and Parks.

EXHIBITS:

The following exhibits were offered and entered into record:

- A. Planning Department Staff Report, with 4 attachments
- B. Five photos of the areas along the river to be affected
- C. Letter from Julia Benson, dated 1/8/02
- D. Aerial photo of the subject area

PARTIES OF RECORD:

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Planning Department
City Attorney

SECTION 01005

SITE SPECIFIC SUPPLEMENTARY REQUIREMENTS

1. CONDUCT OF WORK

1.1 Coordination

1.1.1 Coordination with local government agencies and adjoining property owners shall be made through the Contracting Officer to assist the Contractor in completing the work with a minimum of interference and inconvenience.

1.1.2 Work Hours

Work hours in the construction area will be restricted to 7:00 a.m. to 10:00 p.m. daily, Monday through Saturday, excluding holidays. Work hours other than as specified above shall be coordinated with and approved by the Contracting Officer. Alternate work schedules will not be approved if a Government quality assurance inspector is not available to be on site full time during all hours outside those previously stated.

1.2 GENERAL ACCESS REQUIREMENTS

1.2.1 Regulatory Requirements

Meet all conditions established for the use of existing roadways, areas, and haul routes by those having jurisdiction thereover, including seasonal or other limitations or restrictions, the payment of excess size and weight fees, and the posting of bonds conditioned upon repair of damage caused by the Contractor. Comply with applicable local regulations for haul routes over public highways, roads, or bridges.

1.2.2 Parking of Vehicles

Contractor's vehicles shall only park in approved areas in accordance with the parking plan provided by the Contracting Officer.

1.3 UTILITY OUTAGES

Contractor shall coordinate utility outages with the Contracting Officer at least 7 days in advance. Outages shall be kept to a minimum and any one outage shall not last more than 2 hours. Describe the reason, anticipated length of time, and areas affected by the outage in a written request.

1.4 CONTRACTOR SECURITY

The Corps of Engineers will not be responsible for providing security for Contractor-owned/controlled equipment, supplies, or materials. The Contractor shall provide those necessary security measures.

1.5 SUPPLEMENTARY REQUIREMENTS

1.5.1 Prior to undertaking any blasting activities, the Contractor shall (a) construct a deflector wall in and adjacent to the river to help deflect debris from the blasting area away from PSE's

facilities and from entering the Energy Project, defined below, or damaging the “Project Works” (as defined by the Federal Power Act) of the Energy Project, (b) allowing the Contracting Officer reasonable opportunity to inspect the completed deflector wall, (c) periodically remove accumulated debris at the deflector wall to prevent debris from overtopping the deflector wall and entering the Energy Project, and (d) remove the deflector wall when the Fish Window allows construction in the river between 1 July and 15 September in the year flowing construction.

1.5.2 In advance of any blasting activity, the Contractor shall post signs (procured by the Contractor at it's cost and approved by the Contracting Officer) at the upper and lower observation decks and the upper and lower trailhead of Snoqualmie Falls Park, notifying visitors that the park is closed due to the scheduled blasting activities.

1.5.3 All underground facilities must be located and staked by the Contractor prior to any construction by the Contractor.

1.5.4 Absolutely no spoils shall be deposited by the Contractor under the high voltage electrical lines or other equipment. Low profile construction equipment should be used if the work can be feasibly performed with such equipment.

1.5.5 Prior to commencement of construction, the Contractor shall attend at least one on-site pre-construction meeting “all hands meeting” with representatives of all contractors, PSE, and the Contracting Officer, and at least weekly construction progress meetings thereafter - with the Contracting Officer.

1.5.6 The Contractor shall not store or park materials, equipment or vehicles on PSE's access road at any time.

1.5.7 The Contractor shall keep all access roads clear at such times as will accommodate reasonable use by PSE.

1.6 CONSTRUCTION SEQUENCE AND SCHEDULING

1.6.1 Work Within the 10-yr Flood Elevation (elevation 413.0 on the left bank and below elevation 410.0 on the right bank):

Permits received for this construction prohibit work below elevation 413.0 on the left bank and below elevation 410.0 on the right bank except during the fish window from July 1 through September 15. Contractor shall complete all work below elevation 413.0 on the left bank and below elevation 410.0 on the right bank prior to September 15, 2004. This includes all excavation work, blasting, fill, LWD placement, planting, and pile removal below elevation 413.0 on the left bank and below elevation 410.0 on the right bank, as well as any work that causes turbidity in the river. This work does not include cutting any piles at the river bed when the cutting does not disturb the soil, or removal of the bridge superstructure when the removal is accomplished completely above the surface of the water. Barges or work boats operating in the river do not constitute a violation of this section.

1.6.2 Work to be Accomplished Prior to the Fish Window

Contractor shall stake or otherwise visibly mark the location of elevation 413.0 on the left bank and below elevation 410.0 on the right bank on the ground in all areas of work prior to commencing work. On the left bank, Contractor shall construct a new left bank road as shown on drawing plate C-3, and complete all left bank excavation above elevation 413 prior to the start of the fish window. The new left bank road must be suitable for traffic prior to excavation of the old road, but it need not be paved. Contractor shall complete the road prior to the end of the contract. The contractor shall be ready to start in-water work on the left bank on the first working day of the fish window. On the right bank, as shown on drawing plate C-2, "Right Bank Excavation", Contractor shall relocate and construct the new right bank road, prior to the start of the fish window, and contractor shall blast and excavate to the extent possible above elevation 410.0 prior to the fish window, according to the approved blasting plan.

1.6.3 Coordination

PSE will perform it's own work (collectively "PSE Work") on and adjacent to the Property, to operate PSE's electrical system, to modify and relocate PSE's facilities and equipment and excavate and place base course for left bank road work, and to accommodate the Contractor's construction activity in advance of, concurrently with, and following the Contractor's construction activity. The design drawings for the PSE work are included with the Reference Drawings. The Contractor must closely coordinate with PSE through the Contracting Officer to ensure that the Contractor's construction activity does not conflict or interfere with PSE's work. The Contractor shall participate with PSE through the Contracting Officer in reviewing the schedules for PSE work when requested to do so by the Contracting Officer. The Contractor shall inform the Contracting Officer of any change to the schedule that may be appropriate or that the Contractor may desire to propose as soon as practicable after the Contractor becomes aware of the appropriateness or necessity of such a change. The Contractor shall coordinate the scheduling of the Contractor's construction activities with the Contracting Officer, including sequence of operations among contractors and employees, the receipt of material and equipment deliveries and the inspection of completed work in accordance with the schedule, as the same is updated from time to time. The Contractor shall use diligent and reasonable efforts to minimize any deviations from strict compliance with the schedule that could interfere with PSE's work or require operational changes at the Energy Project.

1.6.4 The Water Quality Protection Plan, Snoqualmie River Section 205 Floor Control Project (attached at the end of Section 01354) includes construction sequencing. See paragraph 3, Construction Sequencing for Each Project Element, of the Water Quality Protection Plan.

1.7 PROTECTION OF PROPERTY

In addition to requirements of the CONTRACT CLAUSES, the Contractor shall protect all property, Government or private, within or in the vicinity of the work site. The Contractor shall ensure that it is not removed, damaged, destroyed, or prevented from its normal use unless so designated in the Contract Documents. All property adjacent to the work shall be protected including, but not be limited to, protection from construction generated dust, debris, water, and vibration. Property includes land, utilities, landscaping, markers and monuments, buildings, structures, site and drainage improvements, whether shown on the Contract Drawings or not.

1.7.1 Restoration

If any property is removed, damaged, destroyed, or prevented from its normal use by the Contractor, the Contractor shall restore it to match its original condition at no cost to the Government. If the Contractor does interfere with the property's normal use, and does not halt such interference when directed to do so by the Contracting Officer, the Contracting Officer may have such property restored by other means and deduct the cost of restoration from payment due the Contractor.

END OF SECTION

SECTION 01025

PAYMENT

PART 1 GENERAL

1.1 GENERAL

The contract price for each item shall constitute full compensation for furnishing all plant, labor, materials, appurtenances, and incidentals and performing all operations necessary to construct and complete the items in accordance with these specifications and the applicable drawings, including surveying performed by the Contractor. Payment for each item shall be considered as full compensation, notwithstanding that minor features may not be mentioned herein. Work paid for under one item will not be paid for under any other item. No separate payment will be made for the work, services, or operations required by the Contractor, as specified in DIVISION 1, GENERAL REQUIREMENTS, to complete the project in accordance with these specifications; all costs thereof shall be considered as incidental to the work.

1.2 PAYMENT

1.2.1 ITEM 0001

Payment will be made at the contract lump sum price for Item No. 0001, All Work for Channel Widening except for Items 0002, 0003, 0004 and 0005, payment of which shall constitute full compensation for Item No. 0001, complete.

1.2.2 ITEM 0002

Payment will be made at the contract unit price for Item No. 0002, All Work for Overburden Excavation, payment of which shall constitute full compensation for Item No. 0002, complete.

1.2.3 ITEM 0003

Payment will be made at the contract unit prices for Item No. 0003, Right Bank Rock Excavation, payment of which shall constitute full compensation for Item No. 0003, complete.

1.2.4 ITEM 0004

Payment will be made at the contract unit prices for Item No. 0004, Extra Insurance Coverage as shown in SPECIAL CLAUSES paragraph SC-5.2, payment of which shall constitute full compensation for Item No. 0004, complete.

1.2.5 ITEM 0005

Payment will be made at the contract lump sum price for Item No. 0005, Prepare As-Built Drawings as Specified in Section 01702 from Preparation to Final Approval, payment of which shall constitute full compensation for Item No. 0005, complete. No partial or total payment will be made for this item until the as-built drawings are fully approved by the Government (A or B action) and all copies of approved drawings are received by the Government.

1.3 PROGRESS PAYMENT INVOICE

Requests for payment shall be submitted in accordance with Federal Acquisition Regulations (FAR) Subpart 32.9, entitled "PROMPT PAYMENT", and Paragraphs 52.232-5 and 52.232-27, entitled "Payments Under Fixed-Price Construction Contracts", and "Prompt Payment for Construction Contracts", respectively. In addition each request shall be submitted in the number of copies and to the designated billing office as shown in the Contract.

1.3.1 When submitting payment requests, the Contractor shall complete Blocks 1 through 12 of the "PROGRESS PAYMENT INVOICE" Form as directed by the Contracting Officer. (A sample form is attached at the end of this Technical Specification Section.) The completed form shall then become the cover document to which all other support data shall be attached.

1.3.2 One additional copy of the entire request for payment, to include the "PROGRESS PAYMENT INVOICE" cover document, shall be forwarded to a separate address as designated by the Contracting Officer.

1.3.3 The Contractor shall submit with each pay request, a list of subcontractors that have worked during that pay period. The listing shall be broken down into weeks, identifying each subcontractor that has worked during a particular week, and indicate the total number of employees that have worked on site for each subcontractor for each week. The prime Contractor shall also indicate the total number of employees for its on site staff for each week.

PARTS 2 and 3 NOT USED

PROGRESS PAYMENT INVOICE

See Federal Acquisition Regulations (FAR) 32.900, 52.232-5, & 52.232-27

1. PROJECT AND LOCATION	2. DATE
3. CONTRACTOR NAME AND ADDRESS (Must be the same as in the Contract)	4. CONTRACT NO.
	5. INVOICE NO.
6. DESCRIPTION OF WORK	7. PERIOD OF PERFORMANCE From: To:
8. DISCOUNT TERMS	
9. OFFICIAL TO WHOM PAYMENT IS TO BE FORWARDED Name: Title: Phone: () -	10. OFFICIAL TO BE NOTIFIED OF DEFECTIVE INVOICE Name: Title: Phone () -
11. CERTIFICATION: I hereby certify, to the best of my knowledge and belief, that (1) The amounts requested are only for the performance in accordance with the specifications, terms, and conditions of this contract; (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code; and (3) This request for progress payment does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.	
<div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Title)</div> <div>(Date)</div> </div>	
12. OTHER INFORMATION OR DOCUMENTATION required by Contract. Provide two (2) copies of each (check and attach if applicable): <input type="checkbox"/> Updated Progress Chart/Schedule <input type="checkbox"/> Progress Narrative <input type="checkbox"/> Certified Payrolls (submitted weekly) <input type="checkbox"/> Safety Exposure Report <input type="checkbox"/> Updated Submittal register <input type="checkbox"/> Progress Photos <input type="checkbox"/> Subcontractor/Employee Listings	(FOR GOVERNMENT USE ONLY) Retainage: _____% Amt.: \$ _____ Withholdings: \$ _____ Reason: _____ _____ _____ Following items are current: As-Builts _____ Yes _____ No O & M Manuals _____ Yes _____ No 1354 Data _____ Yes _____ No Submittal Register _____ Yes _____ No

END OF SECTION

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SECTION 01035

MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 PROPOSED PROJECT MODIFICATIONS:

Price proposals for proposed modifications shall be submitted in accordance with the requirements of the Contract Clause MODIFICATION PROPOSALS - PRICE BREAKDOWNS. If change order work impacts or delays other unchanged contract work, the costs of such impacts or delays shall be included in the proposals and separately identified. Additional instructions for submitting price proposals can be found in NPSP-415-1-1, INSTRUCTION AND INFORMATION FOR CONTRACTORS, a copy of which will be furnished to the Contractor at the Preconstruction Conference. For information applicable to equipment rates used in contract modifications, refer to 00800 - SPECIAL CLAUSES, clause "EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE".

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 01320
PROJECT SCHEDULE

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Schedules

G Preliminary project schedule, two (2) copies.

G initial project schedule, two (2) copies
Activity No. Sort
Predecessor/successor listing
Cost Schedule
Floppy Disk with schedule data in Standard Data Exchange Format (SDEF).
Activity Code Dictionary.

SD-08 Statements

Qualifications; G.

Documentation showing qualifications of personnel preparing schedule reports.

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports. This person shall have previously created and reviewed computerized schedules. Qualifications of this individual shall be submitted to the Contracting Officer for review with the Preliminary Project Schedule submission.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification including the SDEF (Standard Data Exchange Format). Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in Precedence Diagram Method (PDM)

3.3.2 Level of Detail Required

With the exception of the initial and preliminary schedule submission, the Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule.

3.3.2.1 Activity Durations

Contractor submissions shall be required to follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods. A rule of thumb, that the Contractor should use, is that less than 2 percent of all non-procurement activities' Original Durations shall be greater than 20 days.

3.3.2.2 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process

activities include, but are not limited to: submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing.

3.3.2.3 Government Activities

Government and other agencies activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and notice to proceed for phasing requirements.

3.3.2.4 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, (at the lowest tier), Contractor work force, or Government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.5 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.6 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.7 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.8 Phase of Work

All activities shall be identified in project schedule by phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.9 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.10 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.2.11 Critical Activities

The following activities shall be listed as separate line activities on a Contractor's project schedule:

- Submission and approval of blasting plan
- Submission and approval of as-built drawings
- Prefinal inspection
- Correction of punchlist from prefinal inspection
- Final inspection

3.3.3 Scheduled Project Completion

The schedule interval shall extend from notice-to-proceed to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date that the Notice to Proceed (NTP) was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity call "End Project". The "End Project" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted at every project schedule update period to assist the Contracting Officer to evaluate the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in progress or completed activity and ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) shall be allowed only by the case-by-case approval of the Contracting Officer. The Contracting Officer may direct that changes in schedule logic be made to correct any or all out-of-sequence work.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 10 calendar days after Notice to Proceed is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after Notice to Proceed.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after Notice to Proceed. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer or to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative, is necessary for verifying the contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall submit, with the Initial Project Schedule, a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, "ELE", may be identified as "Electrical Subcontractor." Activity code values shall represent the same information throughout the duration of the contract. Once approved with the Initial Project Schedule submission, changes to the activity coding scheme must be approved by the Contracting Officer.

3.5 SUBMISSION REQUIREMENTS

The as noted in paragraph 1.1 items shall be submitted by the Contractor for the preliminary submission, initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

3.5.1.1 File Medium

Required data shall be submitted on 89 mm (3.5 inch) disks, formatted to hold 1.44 MB of data.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule, and the version used to prepare the C.P.M.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the critical path, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in-progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number. For completed activities the Actual Start Date shall be used as the secondary sort.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), Earnings to Date.

3.5.4.5 Cash Flow Report

A report showing scheduled cost of work-in-place by week (tabular report) and a cash flow curve by week (S-curve plot), both based on early dates.

3.5.5 Network Diagram

The time scaled network diagram shall be required on the initial schedule submission and on quarterly update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity or event number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves shall be provided showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly on-site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor will describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date shall be subject to the approval of the Contracting Officer. The following minimum set of items which the Contractor shall address, on an activity by activity basis, during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed activities.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to Notice to Proceed on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities are those delays beyond the Contractors control such as strikes and unusual weather. Also included are delays encountered due to submittals, Government Activities, deliveries or work stoppage which makes re-planning the work necessary, and when the schedule does not represent the actual prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, he shall furnish such justification, project schedule data and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension, shall be based upon the project schedule updates in effect for the time period in question and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, shall not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under two weeks based upon the most recent schedule update at the time of the Notice to Proceed or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any request for time extension for over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until the Contractor submits revisions, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, then the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor will continue to update their schedule with the Contracting Officer's revisions until a mutual agreement in the revisions may be made. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

3.10 NAS DATA SOFTWARE

The Contractor shall manually update NAS data in QCS. See QUALITY CONTROL SYSTEM (QCS) Section 01312. The contractor may use network analysis software different from that used by the Contracting Officer but must provide compatibility with Microsoft Project software.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 CONTROL AND SCHEDULING OF SUBMITTALS

1.1.1 Submittal Coordination Meeting

After the preconstruction conference and before any submittals are sent to the Contracting Officer's Representative (COR), the Contractor shall meet with the COR and develop an approved preliminary submittal register, ENG Form 4288. The Government will provide a suitable electronic copy for import into the RMS system prior to the submittal coordination meeting. During the meeting all required items will be identified and grouped into three categories:

- Government Approved (G)

Government approval is required for extensions of design, critical materials, variations/deviations, an "or equal" decision, equipment whose compatibility with the entire system must be checked, architectural items such as Color Charts/Patterns/Textures, and other items as designated by the COR. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," these submittals will be acted on as "shop drawings."

- For Information Only (FIO)

Submittals not requiring Government approval will be for information only. These are items such as Installation Procedures, Certificates of compliance, Samples, Qualifications, etc. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," these submittals will not be acted on as "shop drawings."

- For Contractor Only (KIO)

Those items that can be visually inspected by the Contractor's Quality Control Representative (CQC) on site or are provided to the Government other than with an ENG Form 4025: The items that fall into this category shall remain on the register but shall not be submitted to the COR. For these items, the "Classification" column on the submittal register shall remain blank.

1.1.2 Final Submittal Register

The final submittal register shall be coordinated with the progress schedule and submitted within 15 days of Notice to Proceed. In preparing the final document, adequate time (minimum of 30 days) shall be allowed for review and approval, and possible resubmittal of each item on the register.

1.2 SUBMITTAL TYPES

Data

Submittals which provide calculations, descriptions, or documentation regarding the work.

Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

Schedules

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

Statements

A document, required of the Contractor, or through the Contractor from a subcontractor, supplier, installer, or manufacturer to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other quality verifications.

Reports

Reports of inspections or tests, including analyses and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer that a product, system or material meets specified requirements. The statement must be dated after the award of this contract and state the Contractor's name and address, project and location, and list specific requirements which are being certified.

Samples

Fabricated and/or unfabricated physical examples of materials, products, and/or units of work as complete units or as portions of units.

Records

Documentation to record compliance with technical or administrative requirements.

Operation and Maintenance Manuals

Data which forms a part of an operation and maintenance manual.

1.3 APPROVED SUBMITTALS

The approval of submittals by the COR shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist. The Contractor, under the CQC requirements of this contract, is responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work. After submittals have been approved by the COR, no resubmittal for the purpose of substituting materials or equipment will be given consideration.

1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the COR and promptly furnish a corrected submittal in the format and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, written notice, as required under the Contract Clause entitled "Changes," shall be given to the COR.

1.5 PAYMENT

Separate payment will not be made for submittals, and all costs associated therein shall be included in the applicable unit prices or lump sum prices contained in the schedule. Payment will not be made for any material or equipment which does not comply with contract requirements.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

Prior to submittal, all items shall be checked and approved by the Contractor's CQC and each item of the submittal shall be stamped, signed, and dated. Each respective transmittal form (ENG Form 4025) shall be signed and dated by the CQC certifying that the accompanying submittal complies with the contract requirements. This procedure applies to all submittals. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including, but not limited to, catalog cuts, diagrams; operating charts or curves; test reports; test cylinders; samples; certifications; warranties and other such required items. Units of weights and measures used on all submittals shall be the same as the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. GA submittals shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. The Contractor shall maintain a complete and up-to-date file of all submittals/items on for use by both the Contractor and the Government.

3.2 SUBMITTAL REGISTER (ENG Form 4288)

The submittal register - ENG Form 4288 – for Divisions 1 through 16 in a format compatible for import into RMS will be provided by the Government and a hard copy shall be further developed by the Contractor prior to the submittal coordination meeting and list each item of equipment and material for which submittals are required in the Technical Specifications. (See paragraph SUBMITTALS at the beginning of each specification section). The Contractor shall approve all items listed on the submittal register. A blank form ENG 4288 is attached at the end of this specification section. During the submittal coordination meeting, a preliminary submittal register will be created by annotating this Form 4288. When the final submittal register is submitted for approval, the Contractor shall complete the column entitled "Item No." and all data under "Contractor Schedule Dates" and return five completed copies to the COR for approval. The Contractor shall review the list to ensure its completeness and may expand general category listings to show individual entries for each item. The numbers in column "Item No." are to be assigned sequentially starting with "1" for each specification section. DO NOT pre-assign transmittal numbers when preparing the submittal register. When a conflict exists between the submittal register and a submittal requirement in the technical sections, other than those submittals referenced in Paragraph 3.9: Field Test Reports, the approved submittal register shall govern. The preliminary, and then the final approved submittal register, will become the scheduling documents and will be updated monthly and used to control submittals throughout the life of the contract. Names and titles of individuals authorized by the Contractor to approve shop drawings shall be submitted to COR with the final 4288 form. Supplier or subcontractors certifications are not acceptable as meeting this requirement

3.3 SCHEDULING

Submittals covering component items forming a system, or items that are interrelated, shall be coordinated and submitted concurrently. Certifications shall be submitted together with other pertinent information and/or drawings. Additional processing time beyond 15 days, or number of copies, may be shown by the COR on the submittal register attached in the "Remarks" column, or may be added by the COR during the coordination meeting. No delays damages or time extensions will be allowed for time lost due to the Contractor not properly scheduling and providing submittals.

3.4 TRANSMITTAL FORM (ENG Form 4025)

Transmittal Form 4025 (sample at end of this section) shall be used for submitting both G and FIO submittals in accordance with the instructions on the reverse side of the form. Transmittal numbers shall be assigned sequentially. Electronic generated 4025 forms shall be printed on carbonless paper and be a reasonable facsimile of the original 4025. If electronic forms are not used, the original 4025 forms shall be used (do not photo copy) and will be furnished by the COR. These forms shall be filled in completely prior to submittal. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item. Each submittal item shall be listed separately on the form, naming subcontractor, supplier, or manufacturer, applicable specification paragraph number(s), drawing/sheet number, pay item number, and any other information needed to identify the item, define its use, and locate it in the work. One or more 4025 forms may be used per specification section, however, DO NOT include more than one specification section per transmittal.

3.5 CROSS-REFERENCE (ENG FORM 4288/ENG FORM 4025)

To provide a cross-reference between the approved submittal register and transmittal forms, the Contractor shall record the "transmittal numbers" assigned when submitting items in column "Transmittal No." of the ENG FORM 4288. The item numbers in column "Item No." of submittal register shall correspond to the item numbers on ENG Form 4025.

3.6 SUBMITTAL PROCEDURE

3.6.1 General

Shop drawings with 4025 forms shall be submitted in the number of copies specified in subparagraphs "Government Approved Submittals" and "Information Only Submittals," or as indicated on the submittal register in the "Remarks" column. Submit a complete collated "reviewers copy" with one 4025 form and attachments (not originals). The remaining copies (4 for GA, 2 for FIO) of 4025 forms and attachments shall not be collated. This would not apply to a series of drawings.

3.6.2 Approval of Submittals by the Contractor

Before submittal to the COR, the Contractor shall review and correct shop drawings prepared by subcontractors, suppliers, and itself, for completeness and compliance with plans and specifications. The Contractor shall not use red markings for correcting material to be submitted. Red markings are reserved for COR's use. Approval by the Contractor shall be indicated on each shop drawing by an approval stamp containing information as shown in this section. Submittals not conforming to the requirements of this section will be returned to the Contractor for correction and resubmittal.

3.6.3 Variations

For submittals which include proposed variations requested by the Contractor, column "h" of ENG Form 4025 shall be checked and the submittal shall be classified as GA, and submitted accordingly. The Contractor shall set forth in writing the justification for any variations and annotate such variations on the transmittal form in the REMARKS block. Variations are not approved unless there is an advantage to the Government. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted variations.

3.6.4 Drawings

Each drawing shall be not more than 28 inches high by 40 inches wide, with a title block in lower right hand corner and a 3 by 4 inch clear area adjacent. The title block shall contain the subcontractor's or fabricator's name, contract number, description of item(s), bid item number, and a revision block. Provide a blank margin of 3/4 inch at bottom, 2 inches at left, and 1/2 inch at top and right. Where drawings are submitted for assemblies of more than one piece of equipment or systems of components dependent on each other for compatible characteristics, complete information shall be submitted on all such related components at the same time. The Contractor shall ensure that information is complete and that sequence of drawing submittal is such that all information is available for reviewing each drawing. Drawings for all items and equipment, of special manufacture or fabrication, shall consist of complete assembly and detail

drawings. All revisions after initial submittal shall be shown by number, date, and subject in revision block.

3.6.4.1 Submittals Containing Drawings Larger than 11 inch by 17 inch

For GA submittals containing drawings larger than A3 size 11 inch by 17 inch, one reproducible and one blue line copy will be required to be submitted with five copies of the ENG Form 4025. The marked-up reproducible (and/or any review comments contained on the page-size comment sheet(s) at the Government's option) will be returned to the Contractor upon review. The Contractor shall provide three copies of blue line drawings (generated from the reviewed reproducible) to the Government within 10 days of Contractor's receipt of the reviewed reproducible. The Contractor shall not incorporate approved work into the project until the Government has received the three blue line copies. The Contractor shall use the marked-up reproducible to make any additional copies as needed. For FIO submittals, one reproducible and two blue line copies shall be submitted with the appropriate number of copies of ENG Form 4025.

3.6.5 Printed Material

All requirements for shop drawings shall apply to catalog cuts, illustrations, printed specifications, or other data submitted, except that the 75 mm by 100 mm (3 inch by 4 inch) clear area adjacent to the title block is not mandatory. Inapplicable portions shall be marked out and applicable items such as model numbers, sizes, and accessories shall be indicated by arrow or highlighted.

3.7 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.8 GOVERNMENT APPROVED SUBMITTALS (GA)

The Contractor shall submit 5 copies of GA submittals with 5 corresponding 4025 forms. Upon completion of GA submittal review, copies as specified below will be marked with an action code, dated, and returned to the Contractor. See "Drawings" above for special instructions if drawings larger than size A3 (11 inch by 17 inch) are used.

3.8.1 Processing of GA Submittals

Submittals will be reviewed and processed as follows:

a. Approved as Submitted (Action Code "A"): Shop drawings which can be approved without correction will be stamped "Approved" and two copies will be returned to the Contractor. No resubmittal required.

b. Approved Except as Noted (Action Code "B"): Shop drawings which have only minor discrepancies will be annotated in red to indicate necessary corrections. Marked material will be stamped "Approved Except as Noted" and two copies returned to the Contractor for correction. No resubmittal required.

c. Approved Except as Noted (Action Code "C"): Shop drawings which are incomplete or require more than minor corrections will be annotated in red to indicate necessary corrections. Marked material will be stamped "Approved Except as Noted - Resubmission Required" and two copies returned to the Contractor for correction. Resubmittal of only those items needing correction required.

d. Disapproved (Action Code "E"): Shop drawings which are fundamentally in error, cover wrong equipment or construction, or require extensive corrections, will be returned to the Contractor stamped "Disapproved." An explanation will be furnished on the submitted material or on ENG Form 4025 indicating reason for disapproval. Complete resubmittal required.

e. Resubmittal will not be required for shop drawings stamped "A" or "B" unless subsequent changes are made by Contractor or a contract modification. For shop drawings stamped "C" or "E," Contractor shall make corrections required, note any changes by dating the revisions to correspond with the change request date, and promptly resubmit the corrected material. Resubmittals shall be associated with the "parent" by use of sequential alpha characters (for example, resubmittal of transmittal 8 will be 8A, 8B, etc). Government costs incurred after the first resubmittal may be charged to the Contractor.

3.9 INFORMATION ONLY SUBMITTALS (FIO)

The Contractor shall submit three copies of data and four copies of ENG Form 4025. FIO submittals will not be returned. Government approval is not required on FIO submittals. These submittals will be used for information purposes. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the Contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the COR from requiring removal and replacement if nonconforming material is incorporated in the work. This does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

3.9.1 Processing of FIO Submittals

FIO submittals shall be submitted prior to delivery of the material or equipment to the job site. ENG Form 4025 shall be marked with the words "contractor approved - information copy only" in the REMARKS block of the form. Submittals will be monitored and spot checks made. When such checks indicate noncompliance, the Contractor will be notified by the same method used for GA submittals. Resubmittal of nonconforming FIO submittals shall be reclassified GA and shall be in five copies.

3.13 CONTRACTOR APPROVAL STAMP

The stamp used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR:

CONTRACT NUMBER _____

TRANSMITTAL NUMBER _____
ITEM NUMBER _____
SPECIFICATION SECTION _____
PARAGRAPH NUMBER _____
_____ APPROVED AS SUBMITTED
_____ APPROVED WITH CORRECTIONS AS NOTED
SIGNATURE: _____
TITLE: _____
DATE _____

CONTRACTORS REVIEW
STAMP

MAXIMUM SIZE:
3 INCHES BY 3 INCHES

01330-9

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A --	Approved as submitted.	E --	Disapproved (See attached).
B --	Approved, except as noted on drawings.	F --	Receipt acknowledged.
C --	Approved, except as noted on drawings. Refer to attached sheet resubmission required.	FX --	Receipt acknowledged, does not comply as noted with contract requirements.
D --	Will be returned by separate correspondence.	G --	Other (Specify)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

RMS SUBMITTAL REGISTER INPUT FORM													CONTRACT NUMBER		DELIVERY ORDER					
TITLE AND LOCATION																				
Snoqualmie River Channel Widening Project, Snoqualmie Falls, Wa.																				
SECTION	PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL											CLASSIFICATION		REVIEWING OFFICE				
			01 - PRECON SUBMITTALS	02 - SHOP DRAWINGS	03 - PRODUCT DATA	04 - SAMPLES	05 - DESIGN DATA	06 - TEST REPORTS	07 - CERTIFICATES	08 - MFRS INSTRUCTIONS	09 - MFRS FIELD REPORT	10 - O&M DATA	11 - CLOSEOUT SUBMITTALS	FOR INFORMATION ONLY	GOVERNMENT APPROVED	DO - DISTRICT OFFICE	AO - AREA OFFICE	RO - RESIDENT OFFICE	PO - PROJECT OFFICE	AE - ARCHITECT / ENGINEER
01025	1.3	Progress payment invoice											X							
01330	3.4	Transmittal form											X							
"	3.8	Government approved submittals											X							
"	3.9	Information only submittals											X							
01320	3.4.1	Preliminary project schedule submittal											X							
"	3.4.2	Initial project schedule submittal											X							
"	3.4.3	Periodic schedule updates											X							
"	3.4.4	Coding scheme											X							
01451	3.2.1	CQC plan											X							
01501	1.3.3	Temporary power connections											X							
01702	3.1.2	As built field data											X							
"	3.2.2	As build electronic file drawings											X							
01703	3.1	Warranty											X							
02220	1.3	Work Plan			X								X							
02230	1.2	Material offer than saleable timber			X								X							
"	1.2	Written permission			X								X							
02250	1C	Safety Plan and Emergency Response Plan											X							
"	5.1	Operational Blasting Plan			X								X							
"	6	Shot Design Record			X								X							
"	7.1	Test Blast Design			X								X							
"	7.3	Blast Damage Report								X			X							
"	8	Operational and Blasting Plan Revision			X								X							
02300	1.5	Earthwork			X								X							
"		Testing						X	X				X							
02390	1.3	Derrick stone			X								X							
"	"	Riprap			X								X							
"	"	Quarry Spalls			X								X							
"	"	Bulk Specific Gravity			X				X				X							
"	"	Gradation Test			X				X				X							
"	"	Evaluation Testing							X				X							
"	"	Stone							X				X							
"	"	Bedding Material							X				X							
"	"	Filter Material							X				X							
"	"	Laboratory							X				X							

02630	1.3	Placing Pipe			X								X						
"	"	Resin Certification						X					X						
"	"	Pipeline Testing						X					X						
"	"	Hydrostatic Test						X					X						
"	"	Determination of Density						X					X						
"	"	Frame cover for gratings						X					X						
02722	1.4	Plant, Equipment, and Tools			X														
"	"	Sampling and testing						X					X						
"	"	Field Density Tests						X					X						
02731	1.4	Equipment			X														
"	"	Sampling and Testing						X					X						
"	"	Density Tests						X					X						
02741	1.3	Mix Design			X								X						
"	"	Contractor Quality Control			X								X						
"	"	Aggregates						X					X						
"	"	QC Monitoring						X					X						
"	"	Asphalt Cement Binder							X				X						
"	"	Testing Laboratory							X				X						
02921	1.2	Equipment			X								X						
"	"	Surface Erosion Control Material			X								X						
"	"	Chemical Treatment Material			X								X						
"	"	Equipment										X	X						
"	"	Delivery											X						
"	"	Finished Grade and Topsoil												X					
"	"	Topsoil												X					
"	"	Equipment Calibration						X											
"	"	Soil Test						X											
"	"	Seed							X				X						
"	"	Topsoil							X				X						
"	"	Organic Material							X				X						
"	"	Mulch							X				X						
"	"	Delivered Topsoil				X							X						
"	"	Soil Amendments				X							X						
"	"	Mulch				X							X						
"	"	Quantity Check											X						
"	"	Seed Establishment Period												X					
"	"	Maintenance Record												X					

02930	1.2	Weed Barrier Fabric				X							X						
"	"	Chemical Treatment Material				X							X						
"	"	Equipment											X						
"	"	Delivery											X						
"	"	Finished Grade, Topsoil and Underground Utilities											X						
"	"	Soil Test						X					X						
"	"	Plant Material							X					X					
"	"	Topsoil							X				X						
"	"	pH Adjuster							X				X						
"	"	Fertilizer							X				X						
"	"	Organic Material							X				X						
"	"	Organic Mulch							X				X						
"	"	Pesticide							X				X						
"	"	Delivered Topsoil							X				X						
"	"	Mulch							X				X						
"	"	Plant Establishment Period												X					
"	"	Maintenance Record											X						
"	"	Maintenance Instructions										X	X						
3307	1.2	Air-Entraining Admixture			X									X					
"	"	Accelerating Admixture			X									X					
"	"	Water-Reducing or Retarding Admixture			X														
"	"	Curing Materials			X									X					
"	"	Reinforcing Steel			X									X					
"	"	Expansion Joint Filler Strips, Premolded			X														
"	"	Joint Sealants - Field Molded Sealants			X														
"	"	Batching and Mixing Equipment			X														
"	"	Conveying and Placing Concrete			X														
"	"	Formwork			X									X					
"	"	Aggregates							X										
"	"	Concrete Mixture Proportions							X					X					
"	"	Cementitious Materials								X									
"	"	Aggregates								X									
RMS INPUT FORM 4288A			Export to RMS in CSV(MS-DOS) (*.csv) Format										Note: Reviewing Office Optional						

SECTION 01354

ENVIRONMENTAL PROTECTION (INCLUDING WATER QUALITY PROTECTION PLAN)

PART 1 GENERAL

1.1 SCOPE

This Section covers prevention of environmental pollution and damage as the result of construction operations under this contract. For the purpose of this specification, environmental pollution, and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for esthetic, cultural, and/or historical purposes. The control of environment pollution and damage requires consideration of air, water, and land, and includes management of visual esthetics, noise, and solid waste, as well as other pollutants.

1.2 QUALITY CONTROL

The Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. The Contractor shall record any problems in complying with laws, regulations, and ordinances, and corrective action taken.

1.2.1 Subcontractors

Assurance of compliance with this Section by subcontractors will be the responsibility of the Contractor.

1.3 NOTIFICATION

When the Contracting Officer notifies the Contractor in writing of any observed noncompliance with Federal, state, or local laws, regulations, or permits, the Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or costs or damage allowed to the Contractor for any such suspension.

1.4 PROTECTION OF ENVIRONMENTAL RESOURCES

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine his activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following subparagraphs:

1.4.1 Disposal of Garbage

Garbage shall be placed in containers which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination.

1.4.2 Refuse Disposal and Cleanup

Refuse shall be defined as debris other than such organic materials as brush or tree stumps.

1.4.2.1 Refuse Disposal

The cost of refuse disposal, such as transportation, handling, dumping fees as applicable, and similar cost, shall be included in the contract price. Refuse shall be disposed of off site, in accordance with all local, state, and Federal rules and regulations, at the Contractor's expense.

1.4.2.2 Fire Hazard

Cloths, cotton waste, and other combustible materials that might constitute a fire hazard shall be placed in closed metal containers and placed outside or destroyed at the end of each day.

1.4.3 Restrictions

The Contractor will not be permitted to deposit refuse in existing garbage cans or refuse dumpsters. Cleaners shall not be poured, drained, or washed into plumbing fixtures or sanitary or storm sewers. Debris, dirt, dust, and stains attributable to or resulting from the work effort shall be removed, cleaned, or effaced by the Contractor to the satisfaction of the Contracting Officer prior to acceptance of the job. Refuse shall not be burned. Burning of vegetation or tree stumps will not be allowed.

1.4.4 Disposal of Chemical or Hazardous Waste

Chemical or hazardous waste shall be stored in corrosion-resistant containers, removed from the work area, and disposed of in accordance with Federal, State, and local regulations.

1.4.5 Disposal of Discarded Materials

Discarded materials, other than those which can be included in the solid waste category, shall be handled as directed.

1.4.6 Protection of Water Resources

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. The Contractor shall comply with the applicable provisions of the Water Quality Protection Plan, attached at the end of this Section.

1.4.7 Particulates

Dust particles, aerosols, and gaseous byproducts from construction activities, processing, and preparation of materials shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and state allowable limits at all times.

1.5 MAINTENANCE OF POLLUTION CONTROL FACILITIES

The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

1.6 RESTORATION OF LANDSCAPE (VEGETATION - SUCH AS TREES, PLANTS, AND GRASS) DAMAGE

All landscape features (vegetation - such as trees, plants, and grass) damaged or destroyed during Contractor operations outside and within the work areas shall be restored to a condition similar to that which existed prior to construction activities unless otherwise indicated on the drawings or in the specifications. This restoration shall be done at no additional cost to the Government. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

Trees shall be replaced in kind with a minimum 4-inch caliper nursery stock. Shrubs, vines, and ground cover shall be replaced in kind; size to be approved by the Contracting Officer.

All plant material shall meet specifications outlined in ANSI Z60.1 - current publication, "American Standard for Nursery Stock."

Grass areas shall be replaced in kind by sodding or seeding. Sod shall be required in all regularly maintained lawn areas and shall be installed according to American Sod Producers Association Guideline Specifications to Sodding.

Grass seeding shall be installed on a minimum 4-inch topsoil and as recommended by the local county extension service.

1.7 PRESERVATION OF HISTORICAL, CULTURAL, AND ARCHEOLOGICAL RESOURCES

If, during construction activities, the Contractor observes human skeletal remains or any items that might have historical or archeological significance, the Contractor shall immediately contact the Contracting Officer so that the appropriate authorities may be notified and a determination can be made of the proper disposition of the find. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent its employees from trespassing on, removing, or otherwise damaging such resources.

Additionally, because of the spiritual significance of Snoqualmie Falls to the Snoqualmie tribe, a tribal monitor will be on the site at all times during activities involving disturbance of the earth to provide cultural resource expertise during construction of the project.

WATER QUALITY PROTECTION PLAN SNOQUALMIE RIVER SECTION 205 FLOOD CONTROL PROJECT SNOQUALMIE, WASHINGTON

1. INTRODUCTION

The U.S. Environmental Protection (EPA) has promulgated regulations under the Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 USCA 1251, et seq.), to control the point source discharge of storm water from construction sites. This program is regulated through the National Pollutant Discharge Elimination System (Section 402 of the Clean Water Act), and is delegated to state authority (in most states) for non-federal lands. This Water Quality Protection Plan was developed to comply with the provisions of the State of Washington Water Pollution Control Law (Chapter 90.48 RCW). This plan identifies conditions and actions, which shall be the responsibility of the construction contractor (contractor), except where another party is identified, and shall be incorporated into the contractor's Storm Water Pollution Prevention Plan (SWPPP). Most likely the contractor shall have to implement other specific measures to reach the targets identified in this document, which shall be identified in the SWPPP.

This project entails widening the Snoqualmie River just above Snoqualmie Falls and below the Highway 202 Bridge. In addition, an abandoned railroad bridge will be removed. Refer to the attached public notice (attachment A) for a more detailed description of the project elements (Please note that the trestle removal and the erosion control trench elements have been removed). Specific stormwater and erosion control measures are discussed below in Paragraph 2. The general sequence of construction activities for the different project elements is described below in Paragraph 3.

2. EROSION AND SEDIMENT CONTROL PLAN

All work occurring on uplands for the flood control project has the potential for discharge of stormwater into the Snoqualmie River. Dredging in the river is anticipated to increase turbidity levels in the river.

The following conditions shall be required for all project elements:

- a. Construction activities shall adhere to the strictest conditions set forth in the permits and authorizations necessary for the project.
- b. Barriers shall be installed to prevent surface runoff from entering the construction area. If water is pumped from the construction area, it shall be treated prior to reintroduction to a storm drainage system, stream, wetland, or other waterbody. Water discharged from the site shall not cause erosion at or near the outfall location and shall meet state water quality standards (WAC 173-201A).
- c. Washing of equipment or fill material shall not occur where the wash water can enter any stream, watercourse, or wetland. All process water shall be treated and discharged into an appropriate sanitary sewer system. No treated water shall be discharged into the river. Reuse of the wash water is encouraged. (based on WAC 173-210A).

Timing

- d. Construction can occur year round. However, winter time construction (November 1, through March 1 shall be avoided if possible because of the high erosion potential during these months. Inwater construction/demolition shall occur only from July 1 to September 15 of any calendar year.

Heavy Equipment Standards and Requirements

- e. Wherever heavy equipment or power equipment is used, the following measures shall be taken to minimize effects on the landscape and the associated fish and wildlife species and habitat in the area.
 - i. The contractor shall be required to have a Spill Prevention Control and Containment Plan (SPCCP). The SPCCP shall take measures to reduce the impacts from potential spills (fuel, hydraulic fluid, etc). These measures shall be in place prior to the start of any construction action. A spill kit, including selectively absorbent pads and booms shall be present on site to deal with minor spills. Contingencies shall be included in the plan to deal with large problems.
 - ii. Equipment staging or refueling areas must be located at least 100 feet landward from the edge of wetlands and streams, in previously developed areas where environmental effects from accidental spills or leakage will be minimized, or in areas where there are barriers which will prevent spilled liquids from entering waterbodies, wetlands or other sensitive areas. Equipment shall be inspected daily for leaks or accumulations of oil or grease and any identified problems shall be fixed before equipment enters areas that drain directly (without any stormwater treatment) to streams or wetlands. Any spills shall be cleaned up promptly. Cleanup shall take precedence over normal work and shall include removal of contaminated materials. The use of alternatives to petroleum based hydraulic systems is encouraged.
 - iii. Existing paths and roadways shall be used for access to project sites, where feasible. If existing paths and roadways do not exist, no more than 2 temporary roads to allow mechanized equipment to access each discrete project area may be installed. Upon project completion, temporary roads shall be graded and all resulting unvegetated, compacted road surfaces shall be tilled, planted to promote vegetation re-establishment, or otherwise stabilized to prevent soil erosion. At a minimum a sweeper shall be used to deal with trackout. If road washing is necessary, the road washwater may not be discharged to the river or to conveyance systems tributary to the river.
 - iv. Equipment ingress/egress points shall be as indicated on the project plans. Access points shall be designed to minimize impacts and working equipment shall not track in the water, during excavation or placement of materials in the river.

Erosion and Sediment Control Protocols and Standards

- f. Erosion and sediment control (ESC) measures must be designed and implemented before there is any opportunity for storm runoff to create erosion. Project designs and construction plans shall emphasize erosion control rather than sediment control. The following are summaries of the principles and specific measures to be used during any construction projects where erosion and sediment problems could arise:

- i. Construction entrances shall be installed to reduce the amount of sediment transported off-site by construction vehicles and to reduce the area disturbed by vehicle traffic and the associated accessways.
- ii. Prior to any clearing or grading, construction limits shall be delineated with flagging and/or fencing.
- iii. The amount of sediment transported beyond the disturbed areas of the construction site shall be minimized by installing and/or maintaining appropriate perimeter protection measures (vegetated strips, silt fences, floating silt curtains) prior to the start of construction. Prior to removal of perimeter protection measures, any sediment accumulation behind the silt fence shall be removed and stabilized so that it cannot enter any waterbody or wetland. Additional silt fence materials shall be stockpiled at the staging area for any repair work that may be required. Stockpiles shall be covered or otherwise stabilized to prevent generation of turbid stormwater.
- iv. Preventative measures to minimize wind transport of soil (e.g., water spraying) shall be taken. The amount of water sprayed for dust control shall be the minimum necessary to prevent airborne dust and sediment. The amount of water used should not create runoff.
- v. Sandbags or an equivalent barrier shall be constructed between the project area and adjacent surface waterbodies in order to isolate upland construction areas from high water that might result due to precipitation.
- vi. Constructed erosion controls shall be periodically inspected to ensure effectiveness and to identify areas requiring maintenance. Sediment traps and discharge aprons shall be checked and cleaned as necessary. Filter silt fences shall be periodically inspected for deterioration and replaced as necessary or removed when vegetation and permanent structures have been successfully established.
- vii. To minimize the duration of area exposed, projects shall be completed as quickly as possible without compromising the quality of work. Temporary and permanent cover measures shall be provided to protect disturbed areas (e.g. erosion control and blankets, plastic covering, mulching, seeding or sodding). Temporary cover shall be installed if any cleared or graded area is to remain un-worked for more than seven days from June 1-September 30; and for more than two days from October 1-May 31. An on site log shall be kept to show that these conditions are honored. Temporary cover shall be completed within 12 hours of cessation of work in areas that will remain un-worked for the specified time periods. As long as the covering remains in place, planting or seeding is not required in covered areas until conditions are appropriate for growth [see condition (j)]. Temporary cover shall not remain in place for longer than 9 months, at which time permanent stabilization of the area shall be required.
- viii. All disturbed areas with exposed soil shall be permanently stabilized within 7 days (June 1 to September 30) or 2 days (October 1 to May 31) from the time final grade is set, unless covered or otherwise stabilized with appropriate temporary erosion and sediment control measures [see condition g(vii)].
- ix. The site shall be thoroughly monitored for turbidity and all ESC measures will be maintained until construction is complete and site conditions stabilize. The goal of monitoring activities shall be to ensure that water quality is in compliance with the Washington State Water Quality Standards for turbidity (WAC 173-201A-030 or project-specific standard). A minimum of six monitoring stations shall be established

(attachment B) – one above each discrete in-water work site to establish the background level (sites A and B), one inside the floating silt curtain (Site C), one immediately below the construction site at the footbridge (Site D), and two below the construction site just upstream and downstream of the outlet for PSE powerplant 2 (sites E and F respectively) to measure the project's effect on turbidity – the location and required compliance level of which will be determined by state standards (WAC 173-201A or project-specific standard). Site F shall be the compliance point. During construction, turbidity shall be measured using a hand-held turbidity meter at least 3 times per workday at the upstream and downstream monitoring locations.ⁱ If turbidity at the compliance point exceeds specified state standards and non-compliance zones, work shall be stopped and actions taken to reduce and/or eliminate the source of turbid discharge shall be taken until turbidity levels are in compliance. Additional monitoring stations shall be established based on the project-specific water quality compliance standards in the relevant permits and authorizations. The establishment of a regular monitoring station at the plunge pool is not recommended due to access issues. The location of the compliance point downstream of the outlet of powerplant 2 is based on the possibility that turbid water will be discharged from this outlet. There is a possibility that other events (e.g. rainfall events or high runoff) could result in additional turbidity testing.

- x. If turbidity levels exceed 25 NTUsⁱⁱ outside of the mixing zone at site F then construction shall be stopped until turbidity levels drop below the standardⁱⁱⁱ. The contractor's on-site environmental monitor shall notify the U.S. Army Corps of Engineers (Corps) Environmental Coordinator (EC), and the King County point of contact (POC). The Corps EC will notify the Washington Department of Ecology. The EC will describe the site conditions and remedial actions being taken to address them. Following this conversation, the EC will notify the site construction supervisor and the site environmental monitor of any further actions required by Ecology in response to the event. The contractor's on-site environmental monitor shall be responsible for any follow-up actions, and for preparing documentation of the event. If exceedences are noted, turbidity monitoring frequency needs to be increased until the project is back in compliance and can adjust the methodology and/or rate of work to stay in compliance.

Post-Construction Requirements

- g. Upon project completion, all waste from project activities shall be removed by the contractor from the project site for disposal at an appropriate location.
- h. Site inspections after project completion and final acceptance will be the responsibility of the Government. These inspections will be performed by a qualified biologist to assure that the project is progressing as planned and that there are no unintended consequences to fish, wildlife and plant species and their habitat. Detailed inspections will be made on all construction projects during or immediately after the first freshet, and also during the first high water following construction.

ⁱ The exact locations of the sampling points in the stream will be subject to approval by the Corps.

ⁱⁱ Or if background turbidity is greater than 25 NTUs noncompliance would be when turbidity levels rise to greater than 25 NTUs over background.

ⁱⁱⁱ Project staff will also be watching for fish kills and will work to limit turbidity if fish kills appear to be caused by, or coincident with a turbid plume.

- i. Follow-on vegetation activities will be the responsibility of the Government. No later than March 1 of the year following construction, native vegetation shall be re-planted in areas specified on the project plans. The site will be monitored for five years for invasives which will be removed on an "as need" basis by a follow-on contractor.

3. CONSTRUCTION SEQUENCING FOR EACH PROJECT ELEMENT

a. Left Bank Channel Widening

Prior to any clearing, a silt fence shall be placed about 3 feet above the water line^{iv}. This placement will be dependent upon the time of year and the threat of flooding. Over the course of construction, approximately 0.9 of an acre of upland soil will be exposed on the left bank. Excavation shall begin on the landward side of the site and progress toward the river. At the completion of the upland excavation, any exposed soil above the water line silt fence shall be stabilized [see conditions f(vii) and f(viii)]. The silt fence near the water line shall be removed only after upland soils have been stabilized.

A segmented silt curtain extending from the water surface to the river bottom shall be deployed in the water around the area of in-water excavation. This curtain shall not cover the entire left bank widening area but shall cover the active excavation area and be securely anchored. The silt curtain shall be moved along the bank as excavation proceeds.^v A second in-water silt curtain shall be deployed immediately upstream of first in-water silt curtain, anchored at the shore and positioned at an angle of 65 degrees downstream^{vi}. It shall be anchored in the channel and act to deflect current from the work area. A boat shall be provided by the contractor to tend the curtains and address the potential for the curtains to blow out or come loose. Prior to commencement of construction, the contractor shall submit a design and safety plan for installation and maintenance of the curtain system. Upon installation of the floating silt curtains, a second silt fence shall be installed at the toe of the slope on the bench at elevation 405 feet. The water line silt fence shall then be removed and the remaining excavation, including the in-water portions, shall commence.

In-water excavation can be accomplished using equipment operating from the bench established at elevation 405 feet or by other methods which shall be subject to Corps approval. This bench shall be constructed so that the bench slope angles towards the landward slope allowing runoff to collect at the toe of the slope. The contractor shall be responsible for assuring that water collected on the bench does not interfere with construction activities, and that return water shall be treated before discharge.^{vii}

Water from excavated material shall not be allowed to reenter the river. *For example*, the excavated material might be placed into watertight dump trucks that would transport the material

^{iv} At the time of the work, the water line may be higher or lower than the line of ordinary high water. Prior to any clearing, the contractor must establish a silt fence between the area to be cleared and the river. Until that area has been finally stabilized, the contractor must complete daily inspection and maintenance of the silt fence. If an established silt fence is inundated or otherwise rendered useless, the contractor must provide a functioning replacement. The Corps of Engineers will provide assistance in locating the silt fence.

^v If conditions permit, the curtain will left in place, putting in another one rather than sliding one downstream. If the isolation could be left in place, it would allow the work area to stabilize.

^{vi} Or at an angle agree to by the contractor and Corps representative.

^{vii} The slope of the bench should be such that the trucks aren't driving through the runoff from both the excavated bank and the water dewatering from the dredging operations. There will be specific design criteria to accommodate water control and handling, and not exceed the capacity of the system to handle the water being collected.

to a purpose-built de-watering area located within the staging area, or taken directly to the permanent off site disposal area. Return water from the de-watering area shall not re-enter any wetland or other waterbody until it meets state water quality standards. Following de-watering, excavated material shall be transported to a suitable upland disposal area and stabilized to withstand runoff and wind erosion.

Monitoring of background turbidity levels in the river shall begin one week prior to construction starting and shall continue until shortly after construction is completed. Monitoring stations shall be established as described above.^{viii}

b. Right Bank Channel Widening

A suction dredge or other suitable device shall be used to remove fine sediment that has collected on the in the vicinity of a debris deflector adjacent to the blasting area. The material removed shall be placed in a dewatering area and then transported to the disposal site, or directly placed in a water tight container and directly disposed off site at an approved area. The onsite storage time shall be minimized. The debris deflector shall be removed only after built up sediment has been removed from the site.

To minimize releases of sediment and rock into the river, blasting on the areas above ordinary high water shall first commence on the land and then work towards the river. Fractured material can then be excavated in the dry by leaving a rock barrier. The rock ridge will provide a shield to absorb blast waves that could harm fish in the river. If possible, further excavation shall occur on the landward side of this barrier below ordinary high water if site conditions allow it. All in water work shall proceed from the upstream end to the downstream end.

Before in-water blasting occurs, a block net (1/2-inch mesh, anchored on both banks and in the middle of the river) shall be provided and placed entirely across the river at least 400 feet upstream of the right bank blasting area. The area between the net and as close as possible to the downstream dam will be electroshocked by the Government using an electroshocking boat. Shocked fish will be collected and released upstream of the block net near the Highway 202 bridge. A boat provided by the contractor shall remain onsite to maintain the net. In the event of net failure, the net shall be redeployed and the area will be electroshocked again by the Contractor. The block net shall remain in place until all in-water blasting and associated work is completed, and then shall be removed by the contractor.

Best management practices shall be used to control releases of drilling mud from drilling to place explosive charges. Blast mats placed on the rock surface shall be used both above and below ordinary high water during blasting to minimize flying rock and debris. Following blasting, the mats shall be removed, and an excavator shall be used to removed rock debris from the blast zone. More details on the blasting operation are contained in the contract specifications for blasting. The contractor shall have to demonstrate significant experience in handling both above ground and underwater blasting operations and excavation work before award of the contract.

As with the left bank excavation, turbidity monitoring shall occur upstream and downstream of the right bank widening area, as described above. In addition, immediately after each blasting event, a biologist will survey the area via boat to ascertain impacts to fish. If dead fish are

^{viii} The pedestrian bridge is located about 700 feet downstream of the downstream end of the left bank widening area.

found, the charge sizes might be adjusted, the block net moved upstream, or other measures to reduce the probability of fish harm would be taken.

Upon completion of the underwater blasting, the rock ridge shall be removed using the same procedures for water quality protection as described for underwater blasting.

c. Bridge Removal

Silt fence shall be installed around the existing railroad roadbed on the west bank prior to removal of the steel truss bridge. The silt fence shall be to and along the ordinary high water line, forming a "U" around the roadbed. The silt fence shall be inspected and repaired, as needed, on a daily basis. At the completion of the bridge removal, the silt fence shall be removed. Depending on the method of bridge removal, barges may be placed under the bridge during demolition to catch and contain debris that falls off the bridge.

4. Oversight And Inspection

The Corps or their designated representative will review, approve, and oversee the implementation of the contractor's SWPPP which shall contain the minimum criteria outlined in this Water Quality Protection Plan during each phase of the project including site re-vegetation. This representative will have suitable experience in water quality management, and will have the ability to formulate and direct immediate change to project construction procedures to maintain water quality standards when necessary. The contractor's SWPPP shall be submitted to the COR for approval at least 30 days prior to construction. Oversight activities shall include the following:

- Review and approve the contractor's SWPPP;
- Ensure compliance with the requirements of this plan and the contractor's SWPPP;
- Identify surface and subsurface drainage locations;
- Identify stabilization needs in all areas;
- Oversee restoration of slopes as required; and
- Approve imported materials used as fill of additional cover material.

END OF SECTION

1

Attachment A
Public Notice

01354-A-i



Public Notice

US Army Corps
Of Engineers
Seattle District

Planning Branch
Post Office Box 3755
Seattle, Washington 98124-2255
Michael Scuderi, Project Manager
Telephone: (206) 764-7205

Public Notice Date: November 14, 2001
Expiration Date: December 14, 2001
Reference: PL-01-03
Name: Seattle District,
Corps of Engineers

30 Day Notice

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District, plans to perform work related to the Snoqualmie River Flood Damage Reduction Study, King County, Washington. This work is subject to Section 404 of the Clean Waters Act and described below and shown on the enclosed drawing(s). This notice was previously issued under number TB-99-01 (issued June 14, 1999) that was subsequently withdrawn on June 12, 2001 to incorporate design changes.

LOCATION: The proposed project is located adjacent to the Snoqualmie River, downstream of the city of Snoqualmie, King County, Washington. The project is located between river mile (RM) 40 and river mile 42.

WORK: The project area is located immediately downstream of the town of Snoqualmie, King County, Washington, above Snoqualmie Falls. The project is comprised of three primary elements: 1) right bank channel widening, 2) left bank channel widening, and 3) removal of an abandoned railroad bridge and approach trestle on the right bank. In addition, rock riprap would be placed in one of the shoreline areas to address increased flood velocities.

Right Bank Channel Widening. The right bank channel widening element consists of removing an existing rock outcrop just upstream from the Puget facility's footbridge. The work would occur along approximately 340 linear feet of river shoreline. The channel in the vicinity of this element would be widened from about 140 feet to 200 feet in order to increase the hydraulic efficiency of the channel widening area during a flood. About 0.2 acres of land above the normal water line of the river and 0.5 acres below the water line would be used for project construction. Site inspection has revealed that the outcrop is probably solid rock, and the modified side slope would end up being nearly vertical. An excavation of about 8,056 cubic yards of rock and common material (dirt) would be needed landward of ordinary high water. An excavation of about 2648 cubic yards of rock and common material (dirt) would be needed riverward of ordinary high water. It is anticipated that the rock will be excavated by blasting and some of the rock would require underwater removal. If possible, directional blasting will be used to provide alcoves for fish refuge and areas for plantings. Blasted rock may be used as riprap or bedding spalls for the left bank element. An existing right bank gravel road, which is owned and used by Puget Sound Energy, would be used to reach the right bank construction site. Because the construction area would encroach on the gravel road, a small portion of the road would have to be moved landward within the channel widening area. At the end of construction, the gravel road would be left in a condition as good or better than currently exists. In addition, after construction native trees would be planted along the modified shoreline wherever conditions would allow for the growth of

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trees (i.e. where the shoreline is not solid rock).

Left Bank Channel Widening. The left bank channel widening element consists of removing earth and rock just downstream of the Highway 202 bridge. The work would occur along approximately 475 linear feet of river shoreline. The channel in the vicinity of this element would be widened from about 150 to 175 to 200 feet in order to increase the hydraulic efficiency of the channel widening area during a flood. About 0.9 acres of land above the normal water line of the river and 1.2 acres below the water line would be used for project construction. Inspection of the left bank area to date indicates that the majority of the material to be excavated is probably earth, and an estimated 12,819 cubic yards of material would have to be excavated along the steep river slope landward of the ordinary high water level and 8,210 cubic yards below ordinary high water. The left bank work would consist of first clearing the bank of trees and shrubs, excavating the slope to a 1.5:1 slope (1.5 feet of horizontal distance for every 1 foot of vertical), and then armoring the bank and buried toe with derrick stone up to elevation 405 feet and class V rock riprap from elevation 405 feet to 414 feet in order to protect the bank from erosion. An estimated 8,482 cubic yards of derrick stone would be needed for the bank. The rock riprap would extend up the bank slope to elevation 414, and from there to the top of the bank the bank would be protected with gravel or spalls. The rock would be 6 feet thick on the buried toe of the rock revetment and bank slope up to elevation 405 feet and about 4.5 feet thick from elevation 405 feet to 414 feet. The weighted toe is required to prevent movement of the bank protection and to provide subsurface armor protection if toe scour should occur. At elevation 405 feet there will be a bench of varying width to facilitate plantings. Approximately 5,989 cubic yards of derrick stone would be placed below ordinary high water.

The removal of trees and shrubs along the left bank shoreline area would require mitigation from the standpoint of loss of aesthetics and loss of fish and wildlife habitat. Willow lifts will be planted in the riprap at elevations 401, 406, and 410 feet. Large trees and shrubs will be planted on the bench at elevation 405 feet. Small and medium size trees and shrubs not to exceed 20 feet in height would be planted on the slope above elevation 414 feet. Larger native trees (both coniferous and deciduous) would be planted at the very top of the bank native trees where space is available. Within the buried toe of the revetment, double rootwads would be imbedded in the riprap and placed about every 30 linear feet along the disturbed shoreline to provide fish habitat.

Railroad Bridge Removal. This project element involves the removal of an old, abandoned railroad bridge which crosses the Snoqualmie River about one-half mile upstream of the State Highway 202 Bridge. The right bank right span of the bridge fell into the river during the 1990 flood. The remaining 180 foot long built-up member steel truss bridge span is supported by two timber piling groups. The right bank approach is a 750 foot long timber pile trestle, while that on the left bank is a 675 foot long earthen embankment leading to a 75 foot long timber pile trestle. The bridge and timber support removal could be facilitated by falsework to be constructed near the left bank of the river. The bridge will be removed in sections to the falsework and cut up and dismantled on the left bank. All rails and ties associated with the bridge will be removed as well. All materials (steel, rails, and timber) are believed to be salvageable material. The right bank approach (wooden trestle) will be removed by dismantling the trestle from the Mill Pond Road placing a temporary access road in the footprint of the trestle. During construction of the road, approximately 0.26 acres of freshwater wetland will be temporarily filled with 208 cubic yards of gravel for the roadbed. After the trestle is dismantled, the temporary road fill will be removed and replanted with native vegetation. The wetland area will be regraded and replanted with wetland vegetation.

Associated Design Features - Shoreline Protection. Completion of the 3 element project would result in significantly increased river velocities during a flood in the vicinity of the State Highway 202 bridge. There are areas, particularly on the right bank just upstream of the bridge, where expected 100-year flow velocities could produce significant erosion. The following measure would be intended to negate damage to critical infrastructure due to increased erosion from increased velocities. The area of concern is the right bank

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shoreline area upstream of the Highway 202 bridge. Within this area riprap would be placed in a shallow trench in an area slightly landward of the shoreline to serve as "launched" stone protection. Should the river erode the bank to the riprap pile, then stone would slip over the bank (launch) and continue to do so until the erosion ceased. The mound of riprap would be a triangular prism about 7.5 feet high, 15 feet wide at the top, and about 260 feet long, totaling about 450 cubic yards of rock. The riprap would be placed in an excavated trench about ten feet deep in order to minimize its appearance. Excavated trench material (about 350 cubic yards) would be grade to existing ground level over the riprap prism to facilitate the re-establishment of vegetation.

PURPOSE: Purpose of this project is to provide flood damage reduction for the city of Snoqualmie while minimizing impacts to the environmental resources of the area.

MITIGATION: Mitigation for the project will focus on avoiding and minimizing project impacts. For the channel widening section the amount of riprap to be placed on the bank will be kept to a minimum (i.e. riprap will not be placed to the top of the bank on the left bank element). To minimize disruption to inwater habitat, the toe of the bank protection structures will be buried. To compensate for the vegetation removed, a combination of willows and native trees and low lying shrubs will be planted on the exposed slopes next to the river and large woody debris will be placed on the toe on the left bank channel widening area to replace lost habitat. At the upstream end of the left bank channel widening area, the riprap will be covered with a dirt blanket to provide a ramp for migrating animals.

The majority of the existing shoreline vegetation on the right bank erosion control area will be retained by placing the self launching toe back from the existing shoreline adjacent to the utility right of way. The use of this alignment will minimize loss of vegetation in part through the use of the existing access road. The overburden removed during preparation of the project site will be stockpiled and then placed over the riprap after it is placed. This will provide a growing medium for revegetation of the area.

The railroad bridge removal will be staged on the left bank to avoid impacts to prime forest habitat and wetlands. The fill placed by the trestle removal will be removed and the area will be regraded and replanted.

During construction, inwater work in the channel widening area will be kept to a minimum. Silt curtains will be used to control turbidity releases to the river. A spill prevention plan will be set up to help avoid spills and program a response to handle spills in case one occurs. Fish will be directed away from the blasting area through the use of a bubble curtain. The timing and size of the blasting will be controlled to minimize disruption to fish and wildlife.

COORDINATION: The proposed work is being coordinated with the following Federal, State, or local agencies:

Federal

Environmental Protection Agency
U.S. Fish and Wildlife Service
National Marine Fisheries Service

Indian Tribes

Snoqualmie Tribe
Tulalip Tribe

State of Washington

Department of Ecology
Department of Fish and Wildlife

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Local

King County Public Works
City of Snoqualmie

CULTURAL AND HISTORIC RESOURCES: The District Engineer has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible, and other sources of information. A field reconnaissance of the site did not identify any significant cultural or historic resources that would directly be affected by the proposed project. Part of the work is located on a property registered in the National Register of Historic Places (Snoqualmie Falls Historic District) but will not affect any register structures or the character of the site. Unknown archeological, scientific, prehistoric or historical data may be lost or destroyed by work to be accomplished under the requested work.

The District Engineer invites responses to this Public Notice from Federal, State and local agencies, historical and archeological societies, Indian tribes and other parties likely to have knowledge of or concerns with historic properties in the area.

ENDANGERED SPECIES - The Endangered Species Act of 1973, as amended, requires assessment of potential impacts to listed and proposed species. The U.S. Fish and Wildlife Service (USFWS) identified federally listed and proposed animal species which may occur in the project vicinity. Included in this list were four species listed as threatened, bald eagles (*Haliaeetus leucocephalus*), marbled murrelets (*Brachyramphus marmoratus marmoratus*), northern spotted owls (*Strix occidentalis caurina*), and bull trout (*Salvelinus confluentus*). The National Marine Fisheries Service (NMFS) identified one species listed as threatened, Puget Sound chinook salmon (*Oncorhynchus keta*), as occurring downstream of the project area. After receipt of comments from this public notice, the U.S. Army Corps of Engineers will evaluate the potential impacts to the listed species.

PUBLIC HEARING - Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION - The decision whether to perform the proposed work will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or not proceed with the proposed work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The evaluation of the impact of the activity on the public interest will include application of the guidelines

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promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act.

ADDITIONAL EVALUATION - The State of Washington is reviewing this work for consistency with the approved Washington Coastal Zone Management Program.

This proposal is the subject of Shorelines Management Act and will be conducted in a manner consistent to the maximum extent practicable with the approved State Coastal Zone Management Program. The city of Snoqualmie, one of the project's local sponsors, will process a Shorelines Substantial Development Permit for this project.

A final Environmental Assessment and Finding of No Significant Impact has already been prepared for the proposed work. Based on the assessment of potential impacts from the proposed work, an Environmental Impact Statement will not be required.

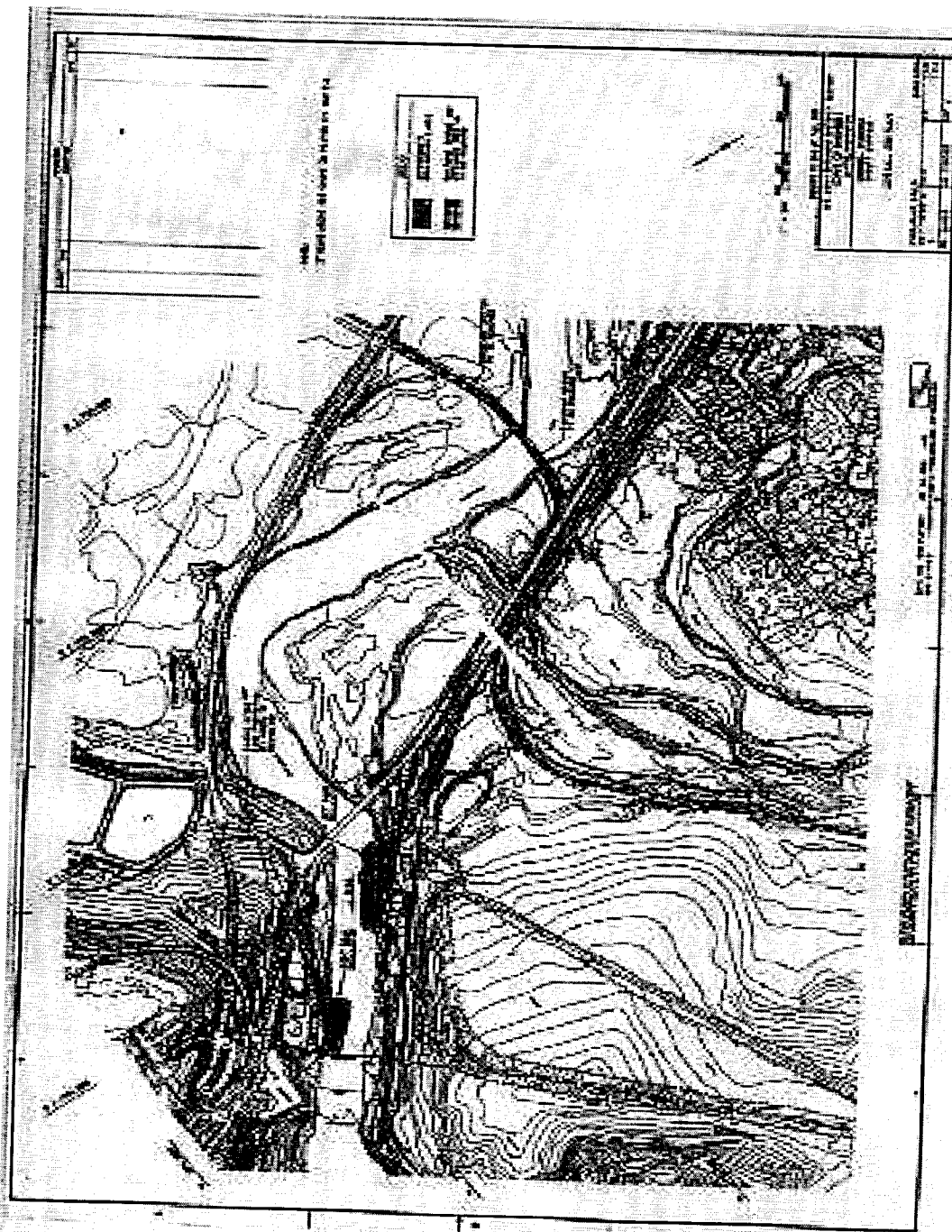
COMMENT AND REVIEW PERIOD: Additional information concerning the project may be obtained at the above referenced address from Mr. Michael Scuderi, (206) 764-7205, or from Mr. Paul Cooke, (206) 764-3622. Comments on these factors will be accepted and made part of the record. Comments should refer to the reference number shown above and reach this office, Attn: Mr. Michael Scuderi, NWS-PM-PL-ER, no later than the expiration date of this public notice to insure consideration.

Encl

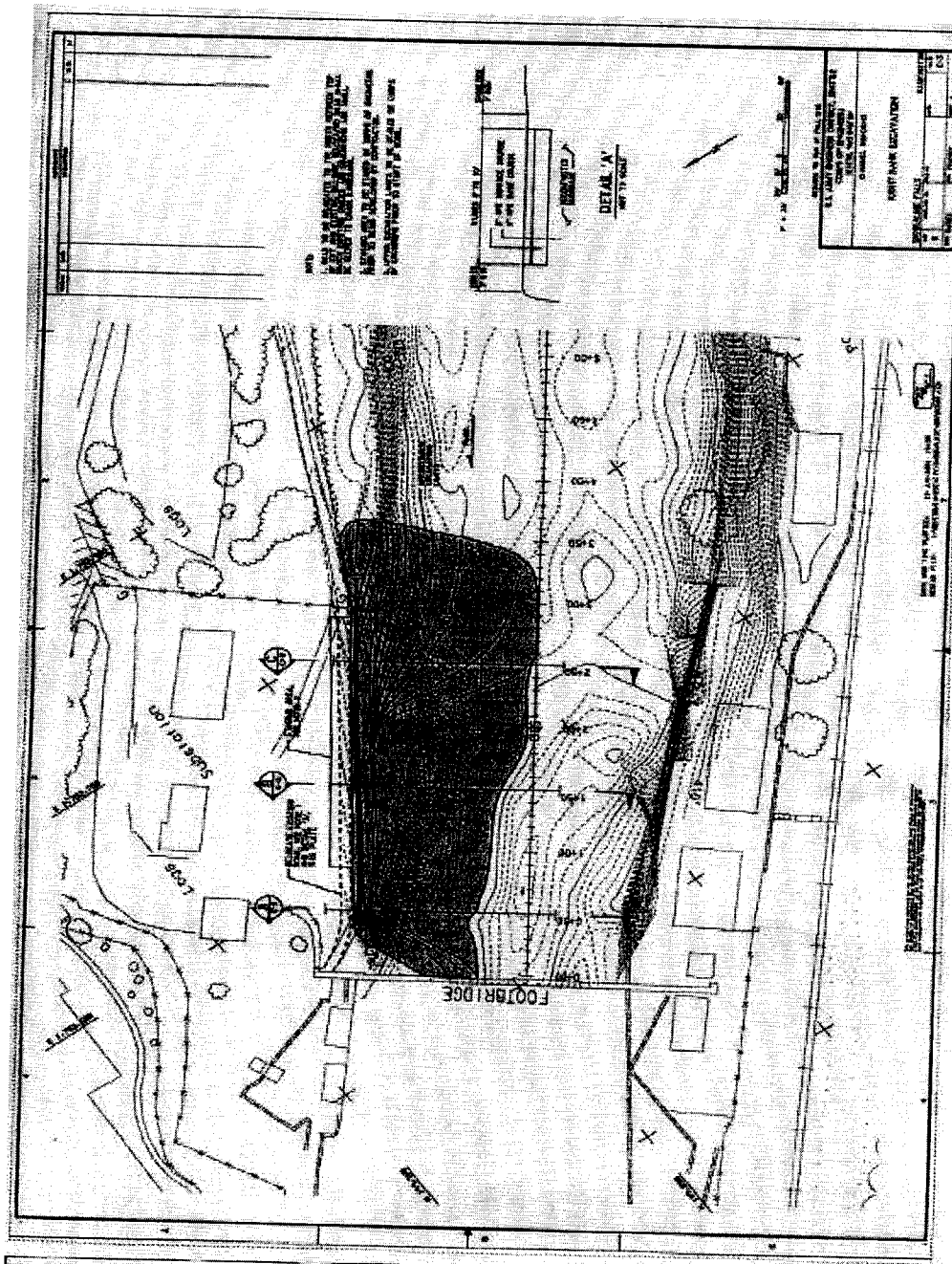
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<p>PURPOSE: Flood Flood Damage Reduction</p> <p>DATUM: NVGD</p> <p>ADJACENT PROPERTY OWNERS: List Available from Corps of Engineers</p>	<p>SNOQUALMIE RIVER FLOOD DAMAGE REDUCTION STUDY</p> <p>PROJECT LOCATION</p> <p>SEATTLE DISTRICT CORPS OF ENGINEERS</p>	<p>IN: Waters of the U.S. adjacent to the Snoqualmie River</p> <p>AT: Sec. 30, T24N R8E</p> <p>COUNTY: King STATE: WA</p> <p>SHEET 1 OF 9</p> <p>DATE: November 14, 2001</p>
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<p>PURPOSE: Flood Flood Damage Reduction</p> <p>DATUM: NVGD</p> <p>ADJACENT PROPERTY OWNERS: List Available from Corps of Engineers</p>	<p>SNOQUALMIE RIVER FLOOD DAMAGE REDUCTION STUDY</p> <p>STUDY AREA</p> <p>SEATTLE DISTRICT CORPS OF ENGINEERS</p>	<p>IN: Waters of the U.S. adjacent to the Snoqualmie River</p> <p>AT: Sec. 30, T24N R8E</p> <p>COUNTY: King STATE: WA</p> <p>SHEET 2 OF 9</p> <p>DATE: November 14, 2001</p>
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PURPOSE: Flood Flood Damage Reduction

DATUM: NVGD

ADJACENT PROPERTY OWNERS:
List Available from Corps of
Engineers

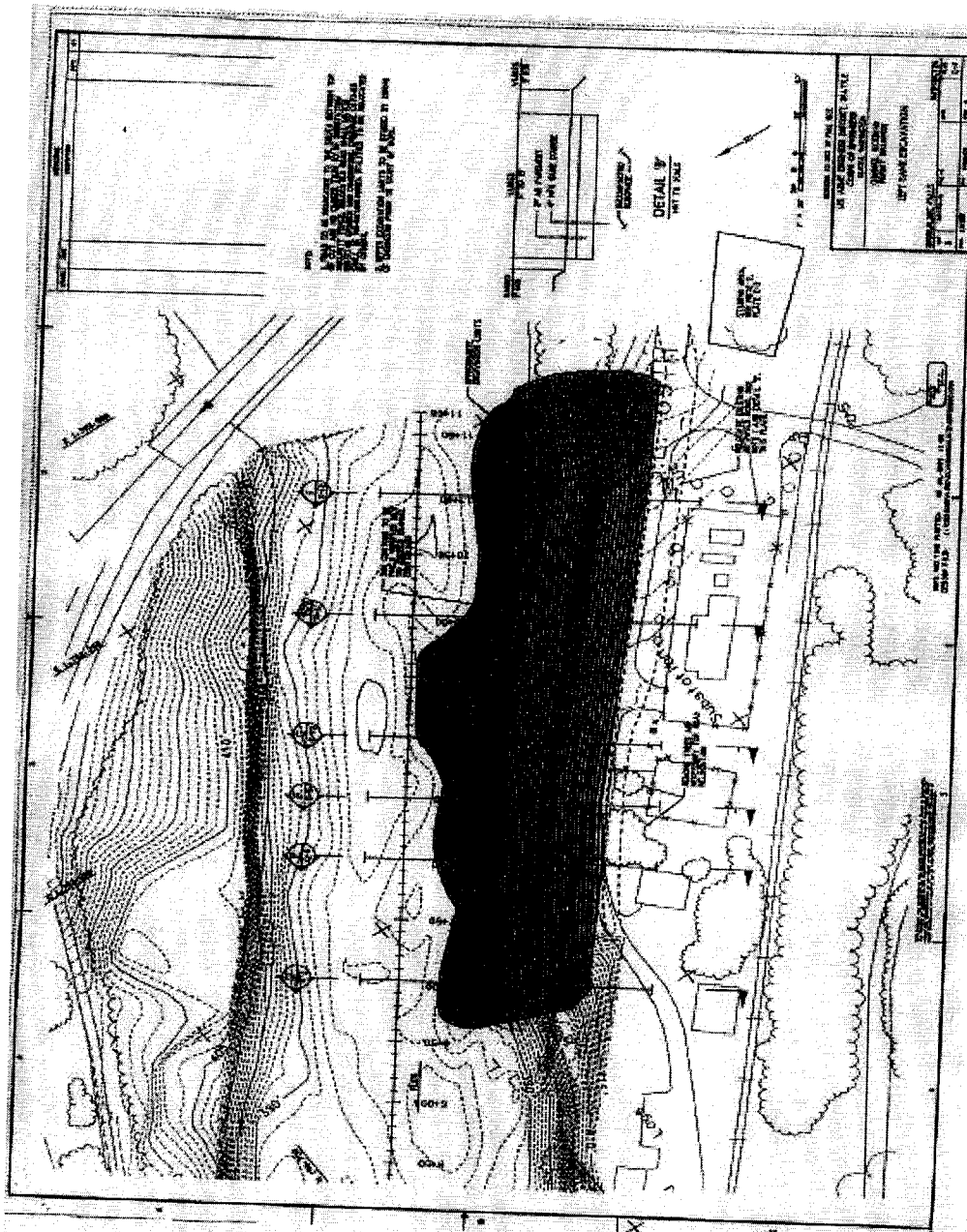
SNOQUALMIE RIVER FLOOD
DAMAGE REDUCTION STUDY

RIGHT BANK CHANNEL WIDENING
AREA

SEATTLE DISTRICT
CORPS OF ENGINEERS

IN: Waters of the U.S.
adjacent to the Snoqualmie
River
AT: Sec. 30, T24N R8E
COUNTY: King STATE: WA

SHEET 3 OF 9
DATE: November 14, 2001



PURPOSE: Flood Flood Damage Reduction

DATUM: NVGD

ADJACENT PROPERTY OWNERS:
List Available from Corps of Engineers

SNOQUALMIE RIVER FLOOD
DAMAGE REDUCTION STUDY

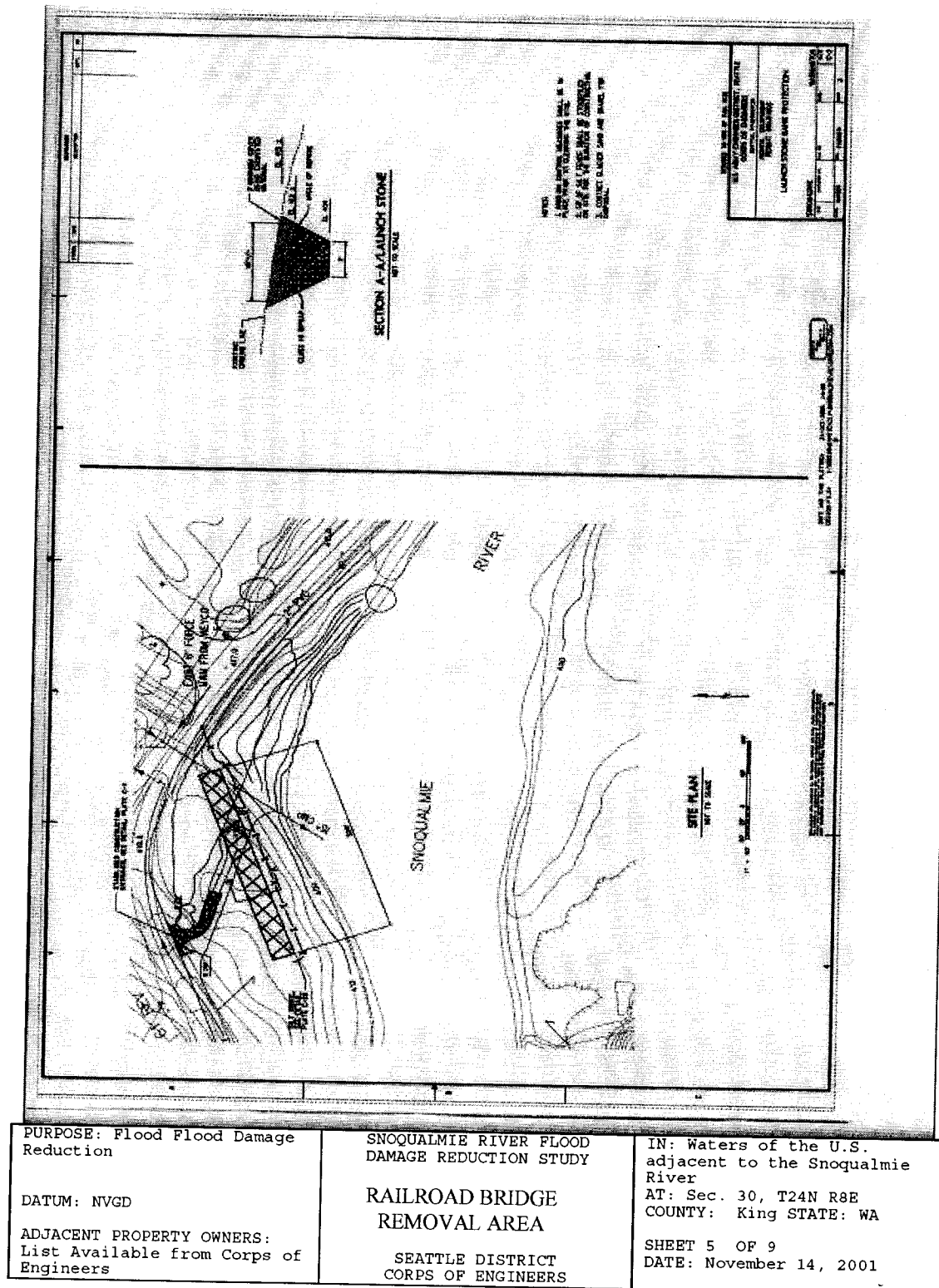
LEFT BANK CHANNEL
WIDENING AREA

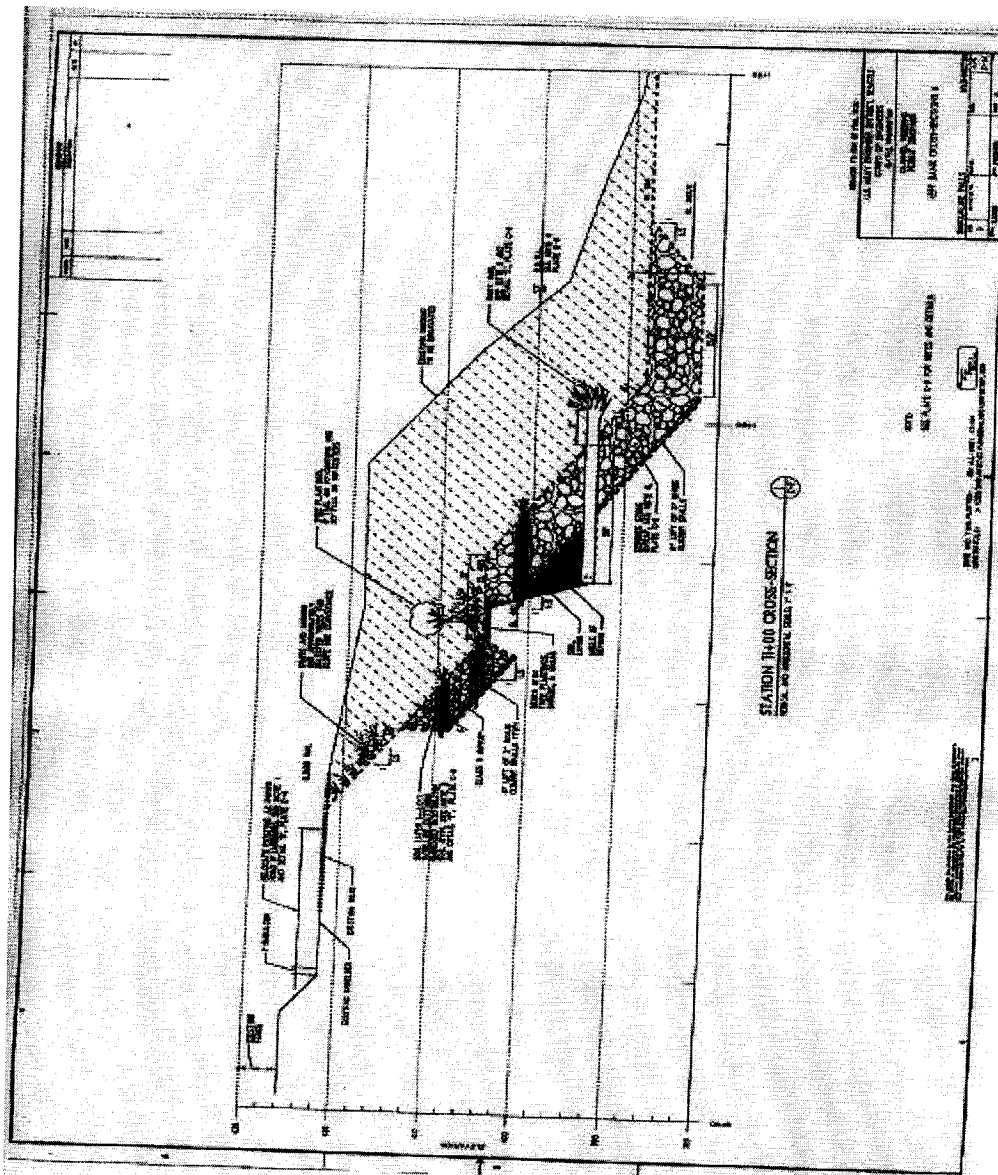
SEATTLE DISTRICT
CORPS OF ENGINEERS

IN: Waters of the U.S.
adjacent to the Snoqualmie River

AT: Sec. 30, T24N R8E
COUNTY: King STATE: WA

SHEET 4 OF 9
DATE: November 14, 2001





PURPOSE: Flood Flood Damage Reduction

DATUM: NVGD

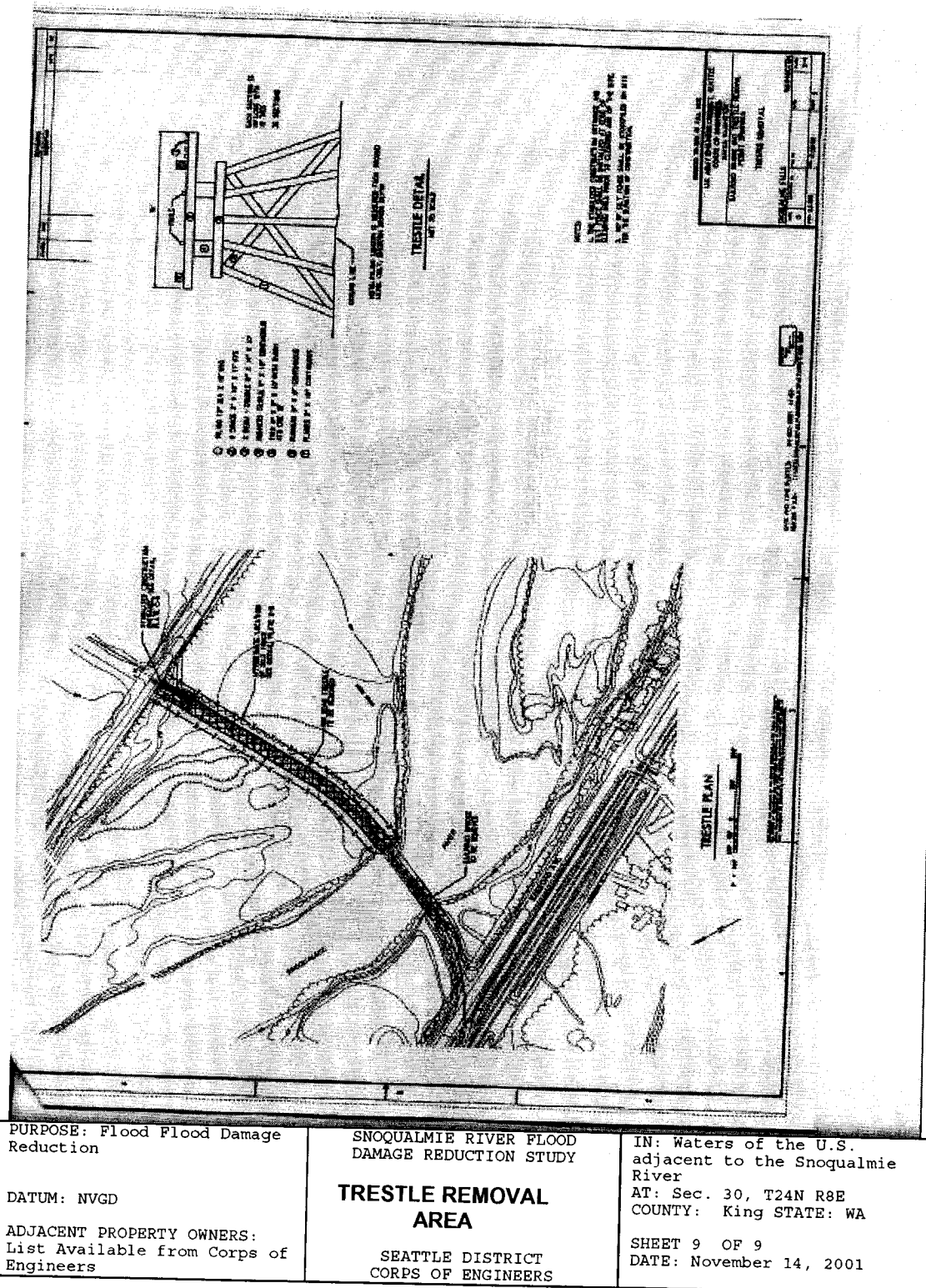
ADJACENT PROPERTY OWNERS:
List Available from Corps of Engineers

SNOQUALMIE RIVER FLOOD
DAMAGE REDUCTION STUDY

CROSS SECTION FOR
LEFT BANK CHANNEL
WIDENING INCLUDING
REPLANTING AND LWD

SEATTLE DISTRICT
CORPS OF ENGINEERS

SHEET 8 OF 9
DATE: November 14, 2001





STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Notice of Application for
Water Quality Certification
and for
Certification of Consistency with the
Washington Coastal Zone Management Program

Date: Nov. 14, 2001

Notice is hereby given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 401 of the federal Clean Water Act of 1977 (PL 95-217), to certify that the project described in the Corps of Engineers Public Notice No. PL-01203 will comply with Sections 301, 302, 303, 306, and 307 of the Act, and with applicable provisions of State and Federal water pollution control laws.

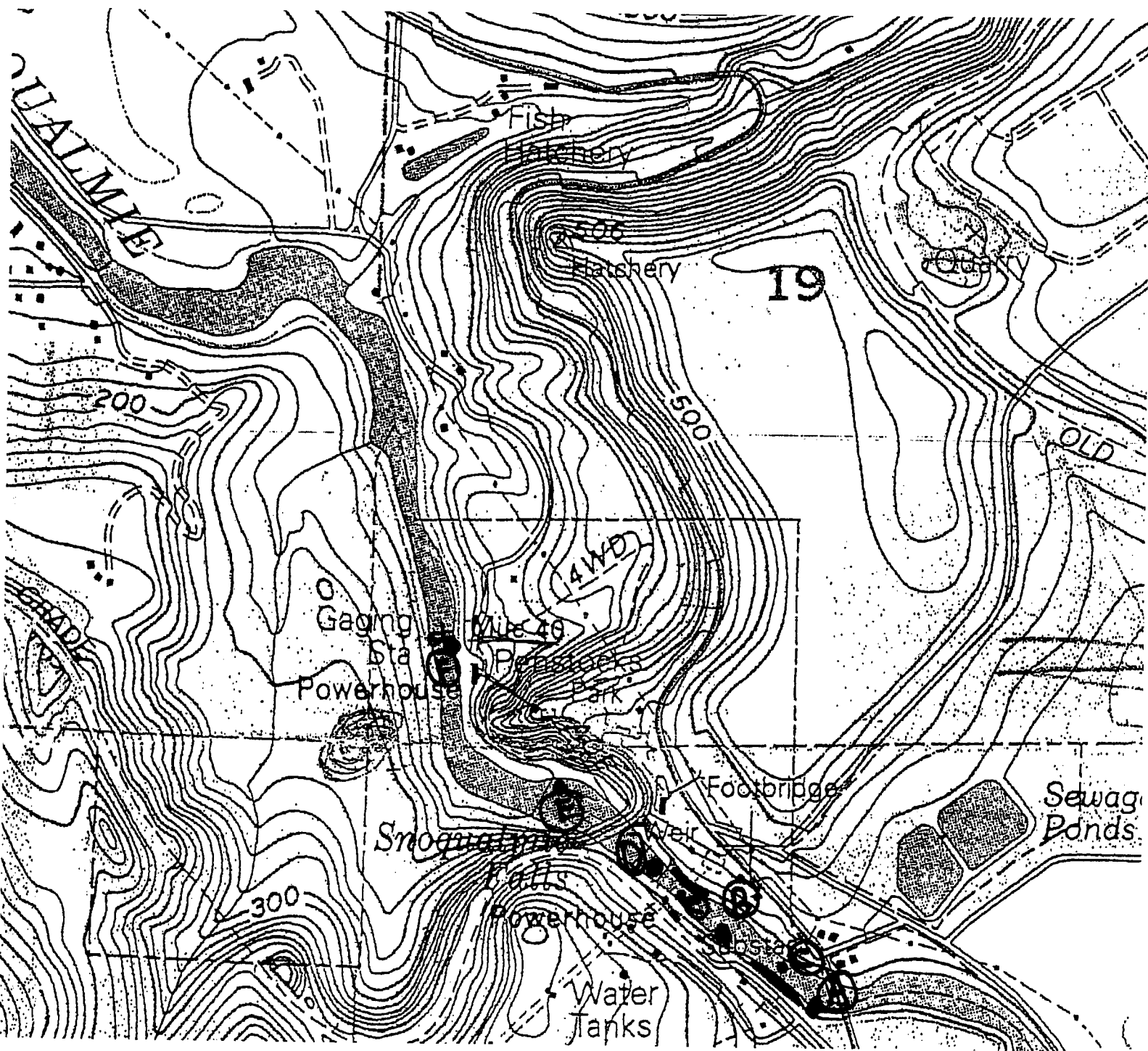
Notice is also given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 307(c) of the federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451), to certify that the above-referenced project will comply with the Washington State Coastal Zone Management Program and that the project will be conducted in a manner consistent with that Program.

Any person desiring to present views pertaining to the project on either or both (1) compliance with water pollution control laws or (2) the project's compliance or consistency with the Washington State Coastal Zone Management Program may do so by providing written comments within 30 days of the above publication date to:

Alice Kelly
Dept. of Ecology
3190 160th Ave. SE
Bellevue, WA 98008-5452

Attachment B
Turbidity Monitoring Station Sites

01354-B-i



- LEFT AND RIGHT BANK CHANNEL WIDENING
- WATER QUALITY MONITORING STATIONS.
DOWNSTREAM STATION IS THE COMPLIANCE POINT

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
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ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
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1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

1.3 LABORATORY VALIDATION

The testing laboratory shall be validated by Corps of Engineers Material Testing Center (MTC) for all tests required by contract. See paragraph 3.7 TESTS.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times,

except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project manager. If the project manager and project superintendent is the same person, the CQC System Manager shall report to someone higher in the Contractor's organization than the project manager.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be

tested, test frequency, and person responsible for each test. Laboratory facilities will be validated by the Corps of Engineers Material Testing Center and approved by the Contracting Officer.

- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health manager shall receive direction and authority from the CQC System manager and shall serve as a member of the CQC staff. Personnel identified in technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawings submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years construction experience on construction similar to this contract or a construction person with a minimum of 10 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager. These individuals shall be directly employed by the prime Contractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

	Experience Matrix	
	<u>Area</u>	<u>Qualifications</u>
a.	Civil	Graduate Civil Engineer with 2 years experience in the type of work being performed on this project or technician with 5 years related experience
b.	Structural	Graduate Structural Engineer with 2 years experience or person with 5 years related experience
c.	Submittals	Submittal Clerk with 1 year experience
d.	Water Quality Manager	Graduate degree in Civil Engineering, Hydrology, Environmental Sciences, or related field with at least 1 year experience in construction water quality monitoring or a field technician with at least 3 years experience in construction water quality monitoring
e.	Blasting Consultant	At least 10 years experience in underwater blasting and in preparing controlled blasting designs near existing operating structures

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at AGC offices throughout the state of Washington and Oregon.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements. All Contractor forms for submitting test results are subject to Contracting Officer approval.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements

of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The

Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements, see Table 1 – Minimum Testing, attached at the end of this specification section. Contractor shall submit all materials test reports on forms standard to industry standards such as ACI, ASTM and AASHTO or with laboratory accreditation forms such as AALA, NIST or NVLAP. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers validated testing laboratory or establish a testing laboratory at the project site which can be validated by the Corps of Engineers in advance of any and all required testing; and in addition, submit proof of validation for approval. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

- a. Validation

The testing laboratory shall be validated by the Corps of Engineers Materials Testing Center (MTC) for all tests required by the contract prior to the performance of any such testing. The validation of a laboratory is site specific and cannot be transferred or carried over to a facility at a different location. Any and all costs associated with this Government laboratory validation shall be borne by the laboratory and/or the Contractor. Validation of a laboratory is not granted for the entire laboratory activity, but only for the specific procedures requested by the inspected laboratory. The inspected laboratory has full choice of the procedures

to be inspected except that the Quality Assurance portion of ASTM E 329 is mandatory to be inspected.

(1) Validation Procedures

Validation of a laboratory may consist of either an inspection or audit as defined herein. Validation of all material testing laboratories shall be performed by the MTC. Validation may be accomplished by one of the following processes:

(a) Inspection. Inspection shall be performed by the MTC in accordance with American Society for Testing and Materials (ASTM) standards E329 and D3740.

(b) Audit. A laboratory may be validated by auditing if it has been accredited by the Concrete and Cement Reference Laboratory (CCRL) or AASHTO Materials Reference Laboratory (AMRL) within the past two years in accordance with ASTM E329. Audit shall be performed by the MTC. Inspection by MTC may be required after auditing if one or more of the critical testing procedures required in the project specification were not included in the CCRL or AMRL inspection report or if there is any concern that the laboratory may not be able to provide required services.

b. Standards of Acceptability

(1) Aggregate, concrete, bituminous materials, soil, and rock. Laboratories for testing aggregate, concrete, bituminous materials, soil, and rock shall be validated for compliance with ASTM E 329, Engineer Manual (EM) 1110-2-1906, or project specifications, as applicable.

(2) Water, sediment, and other samples. Laboratories engaged in analysis of water, sediment, and other samples for chemical analysis shall be inspected to assure that they have the capability to perform analyses and quality control procedures described in references in Appendix A as appropriate. The use of analytical methods for procedures not addressed in these references will be evaluated by the CQAB for conformance with project or program requirements.

(3) Steel and other construction materials, Laboratories testing steel and other construction materials shall be validated for capabilities to perform tests required by project requirements and for compliance with ASTM E329.

c. Validation Schedule

(1) For all contracted laboratories and project Quality Assurance (QA) laboratories testing aggregate, concrete, bituminous materials, soils, rock, and other construction materials, an initial validation shall be performed prior to performance of testing and at least every two (2) years thereafter.

(2) Laboratories performing water quality, wastewater, sludge, and sediment testing shall be approved at an interval not to exceed eighteen (18) months.

(3) All laboratories shall be revalidated at any time at the discretion of the Corps of Engineers when conditions are judged to differ substantially from the conditions when last validated.

d. Validation Process

If a validated laboratory is unavailable or the Contractor selects to use a laboratory which has not been previously validated, Contractor shall coordinate with Corps of Engineers Material Testing Center (MTC) to obtain validation and pay all associated costs. Point of contact at MTC is Daniel Leavell, telephone (601) 634-2496, fax (601) 634-4656, email daniel.a.leavell@erdc.usace.army.mil, at the following address:

U.S. Army Corps of Engineers
Materials Testing Center
Waterways Experiment Station
3909 Hall Ferry Road
Vicksburg, MS 39180-6199

Procedure for Corps of Engineers validation, including qualifications and inspection/audit request forms are available at the MTC web site:

<http://www.wes.army.mil/SL/MTC/mtc.htm>

Contractor shall coordinate directly with the MTC to obtain validation. Contractor is cautioned the validation process is complicated and lengthy, may require an onsite inspection by MTC staff, correction of identified deficiencies, and the submittal and approval of significant documentation. Estimate a minimum of 60 days to schedule an inspection/submittal and receive a validation. Cost of onsite inspections is \$4500 plus travel time and cost from Vicksburg MS. Cost of audits is \$2500. If an onsite inspection is required following an audit, the cost of the inspection shall be \$2500 plus travel time and cost. The Contractor will be invoiced for actual travel costs and shall submit payment direct to the MTC made payable to the ERDC Finance and Accounting Officer prior to the scheduling of the inspection and/or audit. The Contractor shall copy the Contracting Officer of all correspondence and submittals to the MTC for purposes of laboratory validation.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

U.S. Army Corps of Engineers
Materials Testing Center
Waterways Experiment Station
3909 Hall Ferry Road
Vicksburg, MS 39180-6199
Phone: (601) 634-2496 or (601) 634-3261

ATTN: Project _____, Contract Number _____

Coordination for each specific test, exact delivery location and dates will be made through the Area Office. If samples are scheduled to arrive at the laboratory on a weekend (after 1700 Friday through Sunday) notify the laboratory at least 24 hours in advance at (601) 634-2496 to arrange for delivery.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include

the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract.

The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms are attached at the end of this specification section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

TABLE 1
MINIMUM SAMPLING AND TESTING FREQUENCY

<u>Materials</u>	<u>Test</u>	<u>Minimum Sampling and Testing Frequency</u>
<u>Fills, Embankments, Backfills, Subgrade, Subbase, and Base Course Material</u>		
Fill and Embankment	Field Density ^{<u>2/12/</u>}	Two tests per lift for each increment or fraction of 2000 sy and any time material type changes.
	Lab Density ^{<u>3/</u>}	One test initially per each type of materials or blended material and any time material type changes, and one every 10 field density tests.
	Gradation ^{<u>1/</u>}	One test every 200 cubic yards of fill for each type of materials or blended material and any time material type changes.
Subgrade	Field Density ^{<u>2/12/</u>}	One test per each increment or fraction of 2000 s.y.
	Lab Density ^{<u>3/</u>}	One test every 10 field density tests.
Backfill for Culverts, Trenches, Buildings and Walls, Pavements, and Other Structures	Field Density ^{<u>2/12/</u>}	Culverts: One test per each lift.
		Trenches: One test per lift for each increment or fraction of 500 linear feet for backfill. Under pavements, one test every lift and at every crossing.
		Walls and Buildings Perimeters, Including Footings: One test per lift for each increment or fraction of 300 linear feet of backfill.

<u>Materials</u>	<u>Test</u>	<u>Minimum Sampling and Testing Frequency</u>
		Pavements: Two tests per lift for each increment or fraction of 2000 s.y.
		Other Structures: One test per lift for each increment or fraction of 200 linear feet of backfill.
	Lab Density ^{3/}	One test initially per each type of material or blended material and one every 10 field density tests.
	Gradation ^{1/}	One test per each type of material or blended material and one every 10 field density tests.
Subbase and Base	Gradation ^{1/} (including .02 mm particles size limits.	1 sample for every 4,000 sy.
	In-Place Density ^{2/} ^{12/}	1 sample every 2,000 sy.
	Moisture-Density Relationship ^{3/}	1 initially and every 20 density tests.
<u>Asphaltic Concrete and Pavements</u> (Non airfield)		
Asphaltic concrete	Marshall method Test	1 test per day minimum and 1 per 1,000 tons thereafter.
	Specific Gravity	per each Marshall Test.
	Extraction	1 test for each Marshall Method.
	Gradation ^{5/}	1 per each extraction test.
	Fracture faces ^{5/}	1 per each extraction test.
<u>Portland Cement Concrete</u> (Non airfield)		
Coarse and Fine Aggregate ^{7/}	Moisture, specific gravity and absorption ^{8/}	1 initially.

<u>Materials</u>	<u>Test</u>	<u>Minimum Sampling and Testing Frequency</u>
	Gradation and fineness modules	1 every 250 cy of concrete.
	Moisture, specific gravity and absorption ^{8/}	(same as coarse aggregate).
Concrete	Slump	Conduct test twice during each shift of placement and for every 25 cy and more frequently if batching appears inconsistent. Conduct with strength tests.
	Entrained Air	Conduct with slump test.
	Ambient and concrete temperatures	Conduct with slump tests.
	Unit weight, yield, and water cement ratio	Conduct with strength tests. Check unit weight and adjust aggregate weights to ensure proper yield.
	Compressive strength	One set of 3 cylinders per day and every 200 cy for each class of structural concrete. Test one cylinder at 7 days and two at 28 days. Additional field cure cylinders shall be made when insitu strengths are required to be known.

NOTES:

1/All acceptance tests shall be conducted from in-place samples.

2/Additional tests shall be conducted when variations occur due to the contractors operations, weather conditions, site conditions, etc.

3/Classification (ASTM D-2487), moisture contents, Atterberg limits and specific gravity tests shall be conducted for each compaction test if applicable.

4/Materials to be submitted only upon request by the Contracting Officer.

5/Tests can substitute for same tests required under "Aggregates" (from bins or source), although gradations will be required when blending aggregates.

6/Increase quantities by 50 percent for Paving mixes and by 100 percent for Government testing of admixtures. Include standard deviation for similar mixes from the intended batch plant and data from a minimum of 30 tests, if available. Refer to ACI 214.

7/A petrographic report for aggregate is required with the sample for source approval. If the total amount of all types of concrete is less than 153 cubic meters (200 c.y.) service records from three separate structures in similar environments which used the aggregates may substitute for the petrographic report.

8/Aggregate moisture tests are to be conducted in conjunction with concrete strength tests for w/c calculations.

9/For less than 1,000 units, the above test may be waived at the discretion of the Contracting Officer and acceptance based on manufacturers certification and test report.

10/Additional tests shall be performed when changes are made either in the manufacturing processes or in materials used in the production of the masonry units.

11/If adequate storage protection is not provided at the jobsite, additional tests shall be made to determine that the allowable moisture condition has not been exceeded before the blocks can be placed in the structure.

12/The nuclear densometer, if properly calibrated, may be used but only in addition to the required testing frequency and procedures using sandcones. The densometer shall be calibrated and is recommended for use when the time for complete results becomes critical.

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2. EQUIPMENT DATA:

<u>Type, Size, Etc.</u>	<u>Owned/Rented</u>	<u>Hours Used</u>	<u>Hours Standby</u>
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3. QUALITY CONTROL INSPECTIONS AND RESULTS: (Include a description of preparatory, initial, and/or follow up inspections or meetings; check of subcontractors work and materials delivered to the site compared to submittals and/or specifications; comments on the proper storage of materials; include comments on corrective actions to be taken):

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4. QUALITY CONTROL TESTING AND RESULTS (comment on tests and attach test reports):

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5. DAILY SAFETY INSPECTIONS (Include comments on new hazards to be added to the Hazard Analysis and corrective action of any safety issues):

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6. REMARKS (Include conversations with or instructions from the Government representatives; delays of any kind that are impacting the job; conflicts in the contract documents; comments on change orders; environmental considerations; etc.):

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CONTRACTOR'S VERIFICATION: The above report is complete and correct. All material, equipment used, and work performed during this reporting period are in compliance with the contract documents except as noted above.

CONTRACTOR QC REPRESENTATIVE

(Sample of Typical Contractor's Test Report)

TEST REPORT

STRUCTURE OR BUILDING _____

CONTRACT NO. _____

DESCRIPTION OF ITEM, SYSTEM, OR PART OF SYSTEM TESTED:

—

—

DESCRIPTION OF TEST:

—

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TESTS FOR THE CONTRACTOR:

NAME _____

TITLE _____

SIGNATURE _____

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED ITEM, SYSTEM, OR PART OF SYSTEM HAS BEEN TESTED AS INDICATED ABOVE AND FOUND TO BE ENTIRELY SATISFACTORY AS REQUIRED IN THE CONTRACT SPECIFICATIONS.

SIGNATURE OF CONTRACTOR
QUALITY CONTROL INSPECTOR _____

DATE _____

REMARKS

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END OF SECTION

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SECTION 01501

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1 AVAILABILITY OF UTILITY SERVICES

1.1.1 Water and Electricity

The Contractor shall be responsible for providing its own water and electricity.

1.2 SANITARY FACILITIES

Contractor shall provide sanitary accommodations for the use of employees as may be necessary and shall maintain accommodations approved by the Contracting Officer and shall comply with the requirements and regulations of the State Health Department, County Sanitarian, or other authorities having jurisdiction.

1.3 TEMPORARY ELECTRIC WIRING

1.3.1 Temporary Power and Lighting

The Contractor shall provide construction power facilities in accordance with the safety requirements of the National Electric Code NFPA No. 70 and the SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Contractor, or its delegated subcontractor, shall enforce the safety requirements of electrical extensions for the work of subcontractors. Work shall be accomplished by skilled electrical tradesmen.

1.3.2 Construction Equipment

In addition to the requirements of SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1, temporary wiring conductors installed for operation of construction tools and equipment shall be either Type TW or THW contained in metal raceways, or shall be hard usage or extra hard usage multiconductor cord. Temporary wiring shall be secured above the ground or floor in a workmanlike manner and shall not present an obstacle to persons or equipment. Open wiring may only be used outside of buildings, and then only in accordance with the provisions of the National Electric Code.

1.3.3 Submittals

Submit detailed drawings of temporary power connections. Drawings shall include, but not be limited to, main disconnect, grounding, service drops, service entrance conductors, feeders, GFCI'S, and all site trailer connections.

1.4 SAFETY AND FIRE PROTECTION

During the construction period, the Contractor shall provide fire extinguishers in accordance with the safety requirements of the SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1, dated October 1992. Back-up alarms are required for all trucks and dozers. During the construction period, the Contractor shall provide fire extinguishers in accordance with the safety requirements of EM 385-1-1. The Contractor shall remove the fire extinguishers at the completion of construction.

1.5 STAGING AREA

Contractor will be provided adequate open staging area as directed by the Contracting Officer. Area is unsecured, and Contractor shall make provisions for its own security. The Contractor shall be responsible for keeping the staging area clean.

1.6 PROJECT SIGN

Contractor shall furnish and install (1) project identification signs and one safety performance sign in accordance with conditions hereinafter specified and layout shown on drawings attached at end of this section, except Corps communication mark will be Government furnished. Corps communication mark shall be secured with galvanized screws. All lettering shall be block type, upper case. Letters shall be painted black on white background using exterior-type paint. Signs shall be maintained in excellent condition throughout life of job. Project signs shall be located as directed. Upon completion of project, signs shall be removed and shall remain the property of Contractor except Corps communication mark will remain property of the Government.

1.7 TRAFFIC CONTROL

1.7.1 Maintenance of Traffic

Contractor shall conduct its operations in a manner that will not close any thoroughfare or interfere in any way with traffic on railways or highways except with written permission of the Contracting Officer. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the highway authority have been met. Work shall be conducted so as to minimize obstruction of traffic. Approval shall be obtained from the Contracting Officer prior to starting any activity that will obstruct traffic.

The Contractor shall restore vehicular access to the PSE powerplant intake trashrack through the right bank work area at the end of each day. The Contractor shall maintain continuous vehicular access to the PSE facility powerplant facility through the left bank work area. Delays to passenger vehicles shall not exceed ten minutes in the left bank area. Access for large delivery trucks through the left bank area shall be provided within two hours of notice to the contractor by the COR. The left bank access road to PSE shall be left completely clear at the end of each contractor work day.

1.7.2 Traffic Control Measures

The Contractor shall provide for movement of traffic through and around the construction zone in a manner that is conducive to the safety of motorists, pedestrians, and workers. Contractor

shall provide, erect, and maintain, at its own expense, lights, barriers, signals, passageways, detours, etc., that may be required. This shall include placement and maintenance of traffic control devices in accordance with the U.S. Department of Transportation, Federal Highway Administration publication, Manual on Uniform Traffic Control Devices. Streets (except dead end) may be closed to traffic temporarily by approved written request to the Contracting Officer at least 10 working days prior to street closure. Street closures shall at all times allow street access to a building from one direction. Excavations shall not remain open for more than 1 working day without approval.

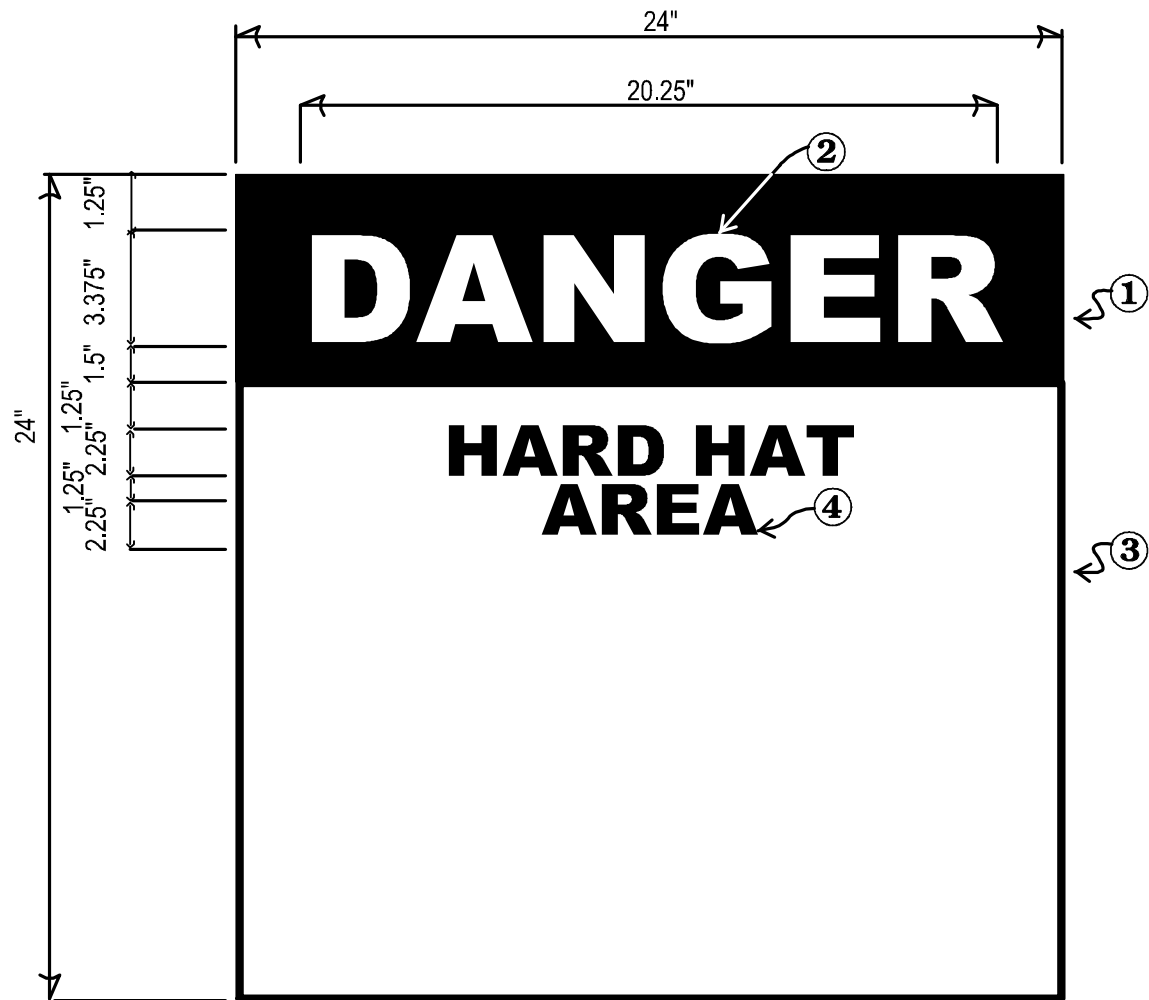
1.8 UTILITIES NOT SHOWN

The Contractor can expect to encounter, within the construction limits of the entire project, utilities not shown on the drawings and not visible as to the date of this contract. If such utilities will interfere with construction operations, he shall immediately notify the Contracting Officer verbally and then in writing to enable a determination by the Contracting Officer as to the necessity for removal or relocation. If such utilities are removed or relocated as directed, the Contractor shall be entitled to equitable adjustment for any additional work or delay. Contractor shall call Utilities Underground Location Center, 1-800-424-5555, at least 48 hours before digging. The types of utilities the Contractor may encounter are waterlines, sewerlines (storm and sanitary), gaslines, fueling lines, steamlines, buried fuel tanks, septic tanks, other buried tanks, communication lines, and powerlines. These utilities may be active or abandoned utilities.

1.9 HARD HAT SIGNS

The Contractor shall provide 610 mm by 610 mm (24 by 24 inch) square Hard Hat Area signs at each entry to the project or work area as directed by the Contracting Officer. A minimum of two signs will be required. Signs shall be in accordance with the sketch at the end of this section.

PART 2 PRODUCTS AND PART 3 EXECUTION (NOT APPLICABLE)



- SIGN SHALL BE FABRICATED FROM .125 THICK 6061-T6 ALUMINUM PANEL
 - COLOR
 1. SAFETY RED (SR)
 2. WHITE
 3. WHITE
 4. BLACK
 - LETTERING SHALL BE HELVETICA BOLD TYPOGRAPHY.
 - LETTERS AND BACKGROUND SHALL BE REFLECTIVE SHEETING MATERIAL.
 - SIGNS SHALL BE POSTED AT 6'-6" (BOTTOM SIGN TO GRADE) OR AS DIRECTED BY THE CONTRACTING OFFICER.
- LETTERING TO BE CENTERED ON PANEL.

The diagram shows a rectangular sign template with overall dimensions of 4'-0" in height and 6'-0" in width. It is divided into two main horizontal sections. The top section is 3'-8" wide and 4'-0" high, containing a 2' x 2' Corps Communication Mark (callout 2) on the left and project information on the right. The bottom section is 6'-0" wide and 2'-0" high, containing project identification text. Dimensions for text placement are given in inches. Callouts 1 through 6 identify specific text elements and their placement rules.

Project Information:

- Design and Construction Supervised By: (Callout 1)
- Project Name (Callout 3)
- Location (Callout 4)
- Architect: (Callout 5)
- Contractor: Smith Associates, Inc. Seattle, Washington (Callout 6)
- US Army Corps of Engineers Seattle District

Dimensions:

- Overall Height: 4'-0"
- Overall Width: 6'-0"
- Top Section Width: 3'-8"
- Bottom Section Height: 2'-0"
- Text Line Spacing (Right Side): 6", 4 1/2", 4 1/2", 6", 2 1/4", 9 1/2", 1 7/8", 1 7/8", 1 7/8", 7 3/4"
- Text Line Spacing (Bottom Section): 2'-0", 3", 1'-9", 1", 1'-9", 2"

NOTES

- ONE-TO TWO-LINE DESCRIPTION OF CORPS RELATIONSHIP TO PROJECT.
COLOR: BLACK
TYPEFACE: 1.25" HELVETICA REGULAR
MAX. LENGTH: 19"
- CORPS COMMUNICATION MARK (2' X 2') WITH CASTLE AND DISTRICT NAME WILL BE GOVERNMENT FURNISHED. MOUNT AS SHOWN. DRILL 5/16" HOLES AND SECURE WITH 1/4" X 1 1/2" NC ALUMINUM BOLTS.
- ONE-TO THREE-LINE PROJECT TITLE LEGEND DESCRIBES THE WORK BEING DONE UNDER THIS CONTRACT.
COLOR: BLACK
TYPEFACE: 3" HELVETICA BOLD
MAX. LENGTH: 42"
- ONE-TO TWO-LINE IDENTIFICATION OF PROJECT OR FACILITY
COLOR: BLACK
TYPEFACE: 1.5" HELVETICA REGULAR
MAX. LENGTH: 42"
- CROSS-ALIGN THE FIRST LINE OF PROJECT OR FACILITY WITH FIRST LINE OF THE CORPS SIGNATURE (US ARMY CORPS) AS SHOWN.
- ONE-TO FIVE-LINE IDENTIFICATION OF PRIME CONTRACTORS INCLUDING: TYPE (ARCH., GENERAL CONTRACTOR, ETC.) CORPORATE OR FIRM NAME, CITY, STATE.
COLOR: BLACK
TYPEFACE: 1.25" HELVETICA REGULAR
MAX. LENGTH: 21"

SCALE: 3/4"=1'-0"

**U.S. ARMY CORPS OF ENGINEERS
SEATTLE DISTRICT**

CIVIL WORKS

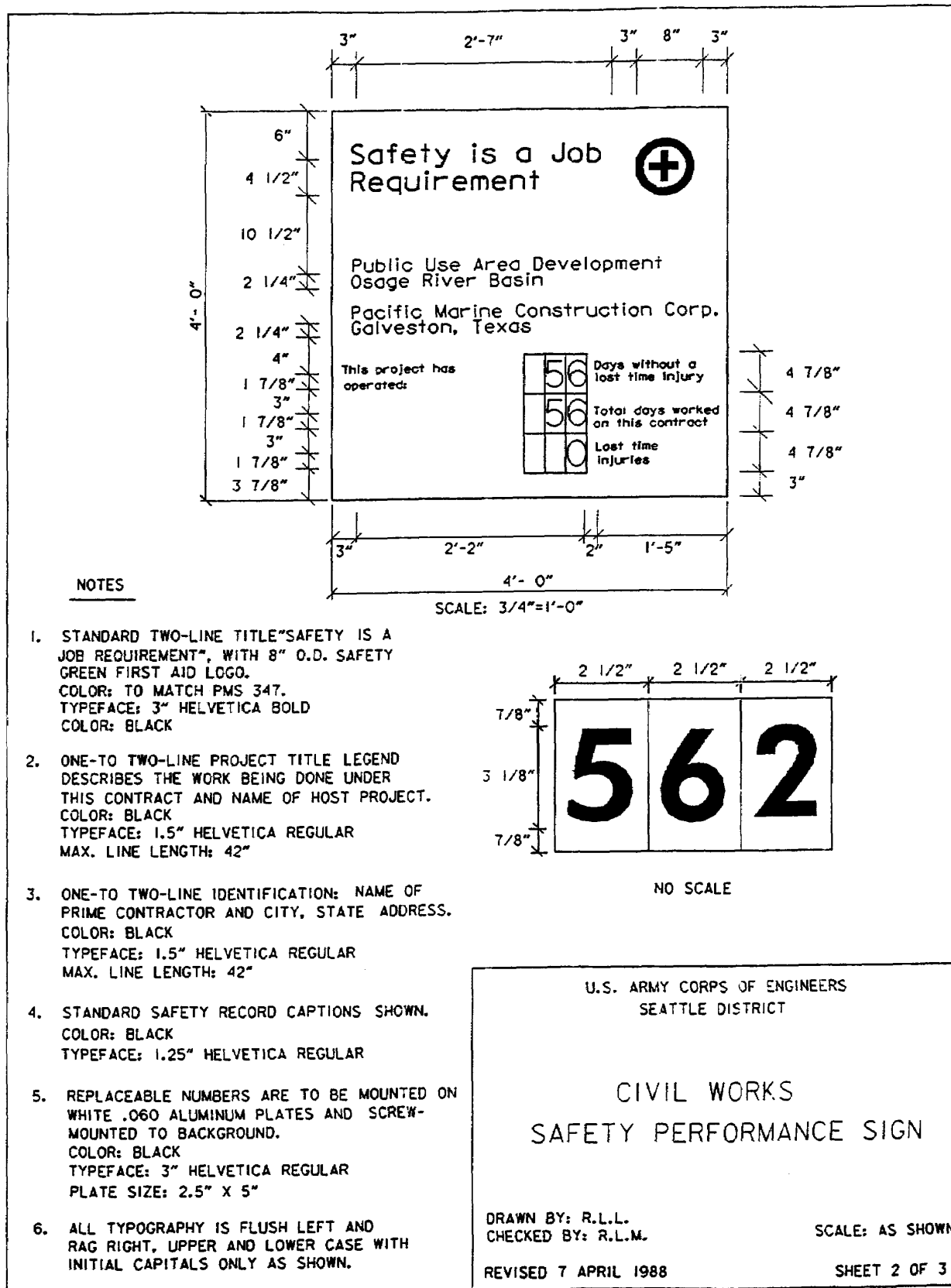
PROJECT IDENTIFICATION SIGN

**DRAWN BY: R.L.L.
CHECKED BY: R.L.M.**

SCALE: AS SHOWN

REVISED 7 APRIL 1988

SHEET 1 OF 3



END OF SECTION

SECTION 01702

AS BUILT RECORDS AND DRAWINGS

PART 1 GENERAL

1.1 SUBMITTALS

Data listed in PART 3 of this section shall be submitted in accordance with section 01330 SUBMITTAL PROCEDURES. Due dates shall be as indicated in applicable paragraphs and all submittals shall be completed before final payment will be made.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 AS-BUILT FIELD DATA

3.1.1 General

The Contractor shall keep at the construction site two complete sets of full size blueline prints of the contract drawings, reproduced at Contractor expense, one for the Contractor's use, one for the Government. During construction, both sets of prints shall be marked to show all deviations in actual construction from the contract drawings. The color red shall be used to indicate all additions and green to indicate all deletions. The drawings shall show the following information but not be limited thereto:

- a. The locations and description of any utility lines and other installations of any kind or description known to exist within the construction area. The location includes dimensions and/or survey coordinates to permanent features.
- b. The locations and dimension of any changes within the building or structure, and the accurate location and dimension of all underground utilities and facilities.
- c. Correct grade or alignment of roads, structures, and utilities if any changes were made from contract plans.
- d. Correct elevations if changes were made in site grading from the contract plans.
- e. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including, but not limited to, fabrication erection, installation, and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- f. The topography and grades of all drainage installed or affected as part of the project construction.
- g. All changes or modifications from the original design and from the final inspection.

h. Where contract drawings or specifications allow options, only the option actually used in the construction shall be shown on the as-built drawings. The option not used shall be deleted.

These deviations shall be shown in the same general detail utilized in the contract drawings. Marking of the prints shall be pursued continuously during construction to keep them up to date. In addition, the Contractor shall maintain full size marked-up drawings, survey notes, sketches, nameplate data, pricing information, description, and serial numbers of all installed equipment. This information shall be maintained in a current condition at all times until the completion of the work. The resulting field-marked prints and data shall be referred to and marked as "As-Built Field Data," and shall be used for no other purpose. They shall be made available for inspection by the Contracting Officer's representative whenever requested during construction and shall be jointly inspected for accuracy and completeness by the Contracting Officer's representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate. Failure to keep the As-Built Field Data (including Equipment-in-Place lists) current shall be sufficient justification to withhold a retained percentage from the monthly pay estimate.

3.1.2 Submittal of the As-Built Field Data

Two sets of the As-Built Field Data shall be submitted to the Contracting Officer for review and approval a minimum of 20 calendar days prior to the date of final inspection. If review of the preliminary as-built drawings reveals errors and/or omissions, the drawings will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the drawings for backcheck to the Contracting Officer within 10 calendar days of receipt. When submitted drawings are accepted, one set of marked drawings will be returned to the Contractor for the completion of the as-built drawings.

3.2 AS-BUILT ELECTRONIC FILE DRAWINGS

3.2.1 No earlier than 30 days after award the Government will have available for the Contractor one set of MicroStation electronic file format contract drawings to be used for preparation of as-built drawings. The electronic file drawings will be available on either 89 mm (3-1/2 inch) 1.44 MB floppy disks or ISO-9660 CD-ROM, as directed by the Contracting Officer. The Contractor has 30 days after the receipt of the electronic file to verify the usability of the MicroStation files, and bring any discrepancies to the attention of the Contracting Officer. Any discrepancies will be corrected within 15 days and files returned to the Contractor. The Contractor shall incorporate all deviations from the original contract drawings as recorded in the approved 'As-built Field Data' (see paragraph 3.1.2). The Contractor shall also incorporate all the written modifications to the contract drawings which were issued by amendment or contract modification. All revisions and changes shall be incorporated, i.e. items marked "deleted" shall be deleted, clouds around new items shall be removed, etc. The drafting work shall be performed by Certified Engineering Technicians and/or individuals with a minimum of 5 years drafting experience. The names and qualifications of these individuals shall be submitted in writing to the Contracting Officer for approval.

3.2.2 No later than 30 days after final acceptance a complete set of as-built drawings shall be submitted in MicroStation electronic file format. The electronic file format, layering standards and submittal requirements are specified in paragraphs below. The as-built drawings shall be done in a quality equal to that of the originals. Line work, line weights, lettering, and use of

symbols shall be the same as the original line work, line weights, and lettering, and symbols. If additional drawings are required they shall be prepared in electronic file format under the same guidance. When final revisions have been completed, each drawings shall be identified with the words "AS-BUILT" in block letters at least 3/8-inch high placed above the title block if space permits, or if not, below the title block between the border and the trim line. The date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest revision notation.

3.2.3 Electronic File Submittal Requirements

3.2.3.1 The MicroStation electronic file(s) deliverable shall be in MicroStation 'DGN' binary format. All support files required to display or plot the file(s) in the same manner as they were developed shall be delivered along with the files. These files include but are not limited to Font Libraries, Pen Tables, and Referenced files.

3.2.3.2 Layering shall conform to the guidelines defined by the American Institute of Architects (AIA) standard document, "CAD Layer Guidelines," Copyright 1990. An explanatory list of which layer is used at which drawing and an explanatory list of all layers which do not conform to the standard AIA CAD Layer Guidelines including any user definable fields permitted by the guidelines shall be provided with each submittal.

3.2.3.3 Electronic File Deliverable Media: All electronic files shall be submitted on MS-DOS FAT or extended FAT format 89 mm (3 1/2 inch) 1.44 MB floppy disks or ISO 9660 format CD-ROM, as directed by the Contracting Officer. A complete set of electronic files shall be submitted along with one complete set of full size mylars taken from the disk. See paragraph 3.2.4 below. Each floppy disk shall be clearly marked with typewritten self-adhesive disk labels which shall contain the following information: Contractor's firm name, project name and location, submittal type (AS-BUILT), the name of each file contained within the disk or archive file, the format and version/release number of each file, a disk number indicating the numeric sequence of the disk in the submittal along with the total number of disks in the submittal, and date the disk was made. If submittal is made on CD-ROM, only the Contractor's firm name, project name and location, submittal type (AS-BUILT) and date will be required. Each submittal shall be accompanied by a hard copy transmittal sheet that contains the above information along with a tabulated information about each file, as shown below:

<u>Electronic File Name</u>	<u>Plate Number</u>	<u>Drawing Title</u>
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Electronic version of the table shall be included with each submittal set of disks.

3.2.4 Submittal of the Final As-Built Drawings

The final as-built record drawings shall be completed and returned together with the approved preliminary as-built drawings to the COE, Seattle District Office, Technical Branch, Records and Information Section, within 30 calendar days of final acceptance. All drawings from the original contract drawings set shall be included, including the drawings where no changes were made. The Government will review all final as-built record drawings for accuracy and conformance to the drafting standards and other requirements contained in DIVISION 1 GENERAL REQUIREMENTS. The drawings will be returned to the Contractor if corrections

are necessary. The Contractor shall make all corrections and shall return the drawings to the same office within 7 calendar days of receipt.

END OF SECTION

SECTION 01703

WARRANTY OF CONSTRUCTION

PART 1 GENERAL

1.1 SUBMITTALS

Submittals shall be made in accordance with SECTION 01330: SUBMITTAL PROCEDURES. Submittal dates shall be as defined in PART 3 of this section.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 WARRANTY OF CONSTRUCTION (APR 1984) (FAR52.246-21):

3.1.1 In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph 3.1.9 of this Clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

3.1.2 This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

3.1.3 The Contractor shall remedy at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to Government-owned or controlled real or personal property, when that damage is the result of:

- a. the Contractor's failure to conform to contract requirements or
- b. any defect of equipment, material, workmanship, or design furnished.

3.1.4 The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

3.1.5 The Government will notify the Contractor, in writing or by telephone, after the discovery of any failure, defect, or damage and the Contractor shall respond and be on-site to investigate the problem within 1 working day after notification. The Contractor shall furnish, and maintain, a 24 hour emergency telephone number as the point of contact. For failures, defects, or damage causing loss of power or heat, the Contractor shall respond and mitigate problem within 4 hours.

3.1.6 If the Contractor fails to remedy any failure, defect, or damage within 5 working days after receipt of notice, the Government will have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

3.1.7 With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:

- a. obtain all warranties that would be given in normal commercial practice;
- b. require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and
- c. enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

3.1.8 In the event the Contractor's warranty under paragraph 3.1.2 of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

3.1.9 Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

3.1.10 This warranty shall not limit the Government's rights under the Inspection of Construction clause of this contract with respect to latent defects, gross mistakes, or fraud.

END OF SECTION

SECTION 02220

DEMOLITION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ENGINEERING MANUALS (EM)

EM 385-1-1	(2002) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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1.2 GENERAL REQUIREMENTS

The work includes demolition and removal of resulting rubbish and debris. Rubbish and debris shall be removed from project site daily, unless otherwise directed, to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer. In the interest of occupational safety and health, the work shall be performed in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Product Data

Work Plan; G,

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, including procedures and methods to provide necessary supports, lateral bracing and shoring when required, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1.

1.4 DUST CONTROL

The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution.

1.5 PROTECTION

1.5.1 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.5.2 Protection of Structures

Structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, shall remain standing without additional bracing, shoring, or lateral support until demolished, unless directed otherwise by the Contracting Officer. The Contractor shall ensure that no elements determined to be unstable are left unsupported and shall be responsible for placing and securing bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

1.5.3 Protection of Existing Property

Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The Contractor shall take necessary precautions to avoid damage to existing items to remain in place; any damaged items shall be repaired or replaced as approved by the Contracting Officer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

1.5.4 Protection of Trees

Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind or as approved by the Contracting Officer.

1.5.5 Environmental Protection

The work shall comply with the requirements of Section 01354 ENVIRONMENT PROTECTION.

1.6 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.7 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 EXISTING STRUCTURES

Existing structures indicated shall be removed to grade.

3.2 FILLING

Holes shall be filled using satisfactory materials as defined in Specification 02300, paragraph 1.4 and tamped to match existing ground compaction.

3.3 DISPOSITION OF MATERIAL

Title to material and equipment to be demolished is vested in the Contractor upon receipt of notice to proceed. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

3.4 CLEAN UP

Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

END OF SECTION

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SECTION 02230

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared.

1.1.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Product Data

Materials Other Than Salable Timber; FIO

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing or are designated for re-use in the project. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

3.2 GRUBBING

Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.3 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

3.4 DISPOSAL OF MATERIALS

3.4.1 Salvageable Timber

All felled timber from which suitable Large Woody Debris (LWD) Root Wads with stems for placement in the Derrick stone bank protection can be salvaged shall be stockpiled for future placement.

3.4.2 Materials Other Than Salvageable Timber

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations, except for salvageable timber, shall be disposed of outside the limits of the project at the Contractor's responsibility, except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

END OF SECTION

SECTION 02250

BLASTING

1. GENERAL

The Contractor's blasting program and methods shall be those necessary to accomplish the excavation shown on the contract drawings in accordance with the procedures specified herein. The blasting consultant is the recognized expert with the rock removal design. The Contractor, notwithstanding blasting expertise, will be required to make necessary plans, examinations, surveys, and test blasts to determine the type, timing and maximum quantity of explosives that can be fired to prevent undue harm to the aquatic environment and damage to property. Incidental damage to the aquatic environment within the blast zone is recognized as a regrettable consequence of the rock removal. Incidental damage to the final rock surface shall be avoided. The Contractor shall control the quantity and timing of explosives fired in any one blast to prevent injuries to persons and to avoid damage to structures, homes, utilities, vehicles, vessels moored or underway, the aquatic habitat, and any property. Other blasting requirements of this contract follow.

a. All blasting operations, including the storage and handling of explosives and blasting agents, shall be performed in accordance with the applicable provisions of the Standard Specifications and all other pertinent Federal, State, and local regulations (see Section 3).

b. The Contractor shall engage the services of a Blasting Consultant(s) who will assist the Contractor in preparation of an Operational Blasting Plan, and design the test blasts. The Consultant(s) shall assist in planning and performing vibration and airblast control. A minimum of 60 days prior to the start of blasting operations, the Contractor shall provide the Contracting Officer with the credentials of the specialist(s) to include but not be limited to past experience, training, and education. The Operational Blasting Plan and the Test Shot Designs shall be submitted with a signed letter from the Blasting Consultant stating that the site visit has been made and that plans have been reviewed and include the recommendations of the Blasting Consultant.

c. The Contractor shall submit a Site-specific Safety Plan and Emergency Response Plan.

d. The Blaster-in-Charge shall be responsible in the development of pattern design and shall have responsibility for loading, connecting and detonating the explosives. The Blaster-in-Charge shall supervise subordinates, who also shall have pertinent blasting credentials.

e. Drilling and blasting shall occur only between 9 a.m. to 5 p.m., Monday through Friday. Other work shall occur between 7 a.m. to 7 p.m., Monday through Friday. Loaded holes shall not be left unattended. Blasting shall not be allowed on Saturday and Sunday.

f. All blasting and debris removal below elevation 410.0 feet, on the right bank, and below elevation 413.0 feet, on the left bank shall be performed only between July 1 and September 15. All explosive charges shall be placed in drilled holes and shall have sufficient burden and stemming to control flyrock and airblast. Mud capping, adobe blasting, and blasting with shaped charges either on the surface or underwater will not be allowed. Only fixed cartridge explosives shall be used on the project. Explosive materials shall be water resistant, possess low hazard sensitivity, and shall not produce high levels of toxic fumes.

g. Proper lighting plant shall fully illuminate the drilling area(s) (barges) when work is being conducted without full daylight. Blast holes shall be accurately positioned using a differential

Global Positioning System (GPS) and recorded with electronic drill monitoring. The Blaster-in-Charge shall determine a safe means to drill the submerged borings. The vertical loading casing shall be seated into rock and accurately positioned by modern survey procedures.

h. The Blaster-in-Charge shall determine a safe means to drill, load and connect the firing lines to the submerged borings. Holes shall be loaded with explosives through a solid casing. Measures shall be taken to prevent bridging of explosive materials and stemming within the hole. Stemming shall be placed from the loaded rock position to the rock collar. The stemming shall be angular chat free of fines. Loaded holes shall be shot within a period that allows safe and certain firing of the submerged explosives. All loaded underwater holes shall be fired upon completion of the proposed drilling pattern for that shot. Loaded holes will not be left unattended at any time.

i. The Blaster-in-Charge shall develop a blasting plan that is safe and that is effective for the site and its variable conditions.

j. The Contractor shall determine a safe means to secure and keep from entangling all downline and trunkline connections for the blast. The safe method to secure these lines shall be accomplished without regard for the number of holes shot or for the equipment being placed in the vicinity of the shot. The connection system shall not use an electrical system. The initiation system may be any safe means to start the firing sequence, but the initiation system shall not use a method that has a kill zone outside the environmental barriers. When blasting near radar or radio transmission facilities or near electrical energy sources where testing has shown the radio frequency (RF) energy or stray electrical current may present a hazard to electrical blasting, an approved non-electrical initiation system shall be employed.

k. Blasting shall be controlled in such a manner that the maximum ground vibration level at any structure shall not exceed a peak particle velocity control value of 1.25 inches per second. The maximum peak positive airblast overpressure at any of the structures, vehicles, and vessels, moored or underway, shall not exceed the control value of 134 dB (0.0145 pound per square inch) for any shot. Peak particle velocity and overpressure shall be recorded for every blast at the minimum number of positions required by these specifications.

l. Completed preblast surveys for the required structures and the Operational Blasting Plan shall be provided to the Contracting Officer and approved prior to any blasting being conducted. A Shot Design Record shall be submitted to the Contracting Officer prior to each blast shot. A Shot Record Addendum shall be submitted to the Contracting Officer after each blast and prior to each subsequent shot.

m. All blasting shall be designed to be safe for life, property and the environment. No provisions of the specifications shall relieve the Contractor of safe and secure blasting operations. Any recommendations to vary from the specifications shall be first approved by Contracting Officer prior to implementation. No modification of the specification shall relieve the Contractor from safe and secure blasting performance, nor shall any approved modifications relieve the Contractor of responsibility for the blast design and blasting operations outcome.

n. The Contracting Officer reserves the right to both suspend the blasting operation and terminate the contract, due to personal injury, damage to the built environment, harm to aquatic life outside of the mitigation barriers or harm to the final rock surface. The contract will be allowed to proceed only, if in the opinion of the Government and its agents, the blasting can be conducted without additional loss. No claim upon the Government shall be made for losses by the Contractor either during the blasting loss suspension or for damage termination. All damage

caused by blasting shall be rectified or repaired or replaced by the Contractor at no cost to the Government.

2. DEFINITIONS

2.1 Blaster-in-Charge. The Blaster-in-Charge must hold a Professional license (current) to practice in the State of Washington, and any other certifications needed. Must have a minimum of 10 years experience as a Blaster-in-Charge, 5 successful projects that involved in-water blasting, and 5 successful projects that involved blasting near structures that require seismic monitoring and protection (can be same as in-water projects).

2.2 Production Blasting, as covered herein, refers to the main rock-removal blasting. Production holes shall be detonated in a controlled delay sequence in accordance with the Operational Blasting Plan. Test Blasting refers to the controlled use of explosives and blasting accessories prior to, and during, Production shooting. The purpose of the Test Blasting is to: develop the Production Blasting design; deploy and employ the physical parameter monitoring; and, allow the Government to monitor the effects on the environmental system, should it choose to do so.

2.3 Disposal debris refers to dredged river alluvium, detached stone, and rock mass muck (rubble) that shall be placed in designated disposal locations. The Contracting Officer shall have the sole discretion of determining if any or all volumes are disposal debris or solely shot rock material, and shall not relieve the Contractor from full responsibility to perform the contract.

2.4 Explosives and explosive materials are terms used herein that includes all explosive materials, blasting agents, boosters, primers, detonating lines, initiators, and other blasting accessories.

2.5 Flyrock is rubble projectiles thrown by the blast to variable distances from a blast site. Because of the high velocities generated, some flyrock has the capacity to travel hundreds of feet. The Contractor is responsible for flyrock damage, and shall employ both blast design and engineering controls to diminish flyrock size and thrown distances, if necessary.

2.6 Monitoring for physical parameters shall be conducted for every shot. The continuous monitoring location is the single position of required monitoring conducted by the Contractor for every blast. The continuous monitoring location shall be a secure, marked and surveyed position along the nearby shore and shall remain at the same position for a particular reach of blasting shots. Both airblast overpressure and particle velocity shall be recorded for each shot at the continuous monitoring locations. Dependent monitoring locations are the positions of monitoring airblast overpressure and/or particle velocity for blasts, which have scaled distances below 50 feet per square root of pounds of explosives or which have met other conditions. The Contractor shall allow and the Contracting Officer may perform its own survey operations as a quality assurance (QA) procedure. The Contractor shall provide the Contracting Officer sufficient notice prior to each blast so that the Contracting Officer may perform its own blast monitoring.

2.7 Monitoring of drilling, jetted casing and the sweeping beam shall be conducted by the Contractor to locate the drill bit or casing tip or sweeping beam by a differential Global Positioning System (GPS). The electronic monitoring shall record time and position. For air-percussion or core-rotary drilling the monitoring shall list various mechanical parameters; the drilling parameters shall include, at minimum, supplied air or water pressure, downward force, applied torque, bit rotation rate, advance direction (up or down), penetration rate, bit size, and the date and time the bit was installed new. For jetted casing the monitoring shall record the mechanical parameters of supplied air pressure, downward force, advance direction (up or down), and penetration rate.

2.8 Muck is defined as the detached shot rock rubble following a blast. Muck contains little or no river alluvium. Mucking is the removal of the shot rock muck from the blast area to the muck's final disposal site.

2.9 Physical parameters to assess the potential of blasting to cause damage shall be monitored by the Contractor.

a. Airblast overpressure is the damage parameter assessment for air pressure shock waves at a location induced by distant blasting. Airblast overpressure is the time dependent, maximum, zero-to-peak pressure change in units of pounds per square inch (psi). Weather conditions are important when assessing possible overpressure damage; e.g., air temperatures colder at the ground surface relative to higher elevations (thermal inversions) cause blast-induced noise to be refracted back to the ground surface, a situation conducive to damage.

b. Peak particle velocity is a damage criterion to gauge ground vibration at a site induced by blasting. Peak particle velocity is the maximum of the three ground vibration velocities measured in the vertical, longitudinal and transverse directions, measured in units of inches per second (ips). Particle velocity shall not be computed as the square root of the sum squares of the component, maximum velocities because these maxima occur at different times. (Example, the peak velocity for the component maxima of 0.34 ips radial, 0.08 ips transverse and 0.16 ips vertical is less than 0.384 ips, the square root of the sum of the component peak squares, however it must be greater than 0.34 ips.)

2.10 Preblast survey is the inventory of a specified structure or business or utility to evaluate its condition at the time of the survey in regard to existing conditions similar to those caused by blasting. The specified preblast surveys shall be produced prior to any blasting being conducted.

2.11 Product Specifications: The delay elements in blasting caps are known to deteriorate with age. For this reason, it is required that all blasting caps used on the project be one year or less of age. To ensure the accuracy of firing times of blasting caps, it is required that each cap period come from the same lot number. Mixing of lot numbers for any cap period is prohibited. Explosives are also known to age and deliver much less than the rated energy. For this reason, it is required that all explosives used on the project will be one year or less of age. When, in the opinion of the Contracting Officer, any blasting product is either of excessive age or in what appears to be a deteriorated condition, all work shall cease until the products age or quality can be determined. No blasting product shall be brought to the job site if the date codes are missing.

2.12 Scaled distance is a blasting factor used to assess the potential of damage at a location; the greater the scaled distance value the less likely damage will occur at that location. The scaled distance is the closest approach divided by the square root of the Maximum Charge Weight of explosives per delay, in units of feet per square root of pounds of explosives (fpp^{1/2}). Scaled distance using the cube root of charge weight may be used for airblast calculations. The scaled distance computations are made for several positions around the blast area. Closest approach for a shot sequence is the shortest distance between any explosives location and a structure's location. The closest approach for a particular location or monitoring station is the shortest distance between that position of interest and its nearest explosives position. Maximum Charge Weight per Delay: For purposes of vibration control, any charges firing within any 8-millisecond time period are considered to have a cumulative effect on vibration and airblast effects. Therefore, the maximum charge per delay equals the sum of the weight of all charges firing within any 8-millisecond time period. For instance, if two 10-lb charges fire at 100 ms and one 15-lb charge fires at 105 ms, the maximum charge per delay would be 35 lbs.

2.13 Scaling: All rock on the cut face that is loose, hanging, or which creates a potentially dangerous situation shall be removed or stabilized, to the Contracting Officer's satisfaction, during or upon completion of the excavation in each lift. Drilling of the next lift shall not be allowed until this work has been completed. The slopes shall be scaled throughout the span of the contract and at such frequency as required to remove all hazardous loose rock or overhangs. The slopes shall be hand scaled using a suitable standard steel mine scaling rod. Subject to the Contracting Officer's approval, other methods such as machine scaling, hydraulic splitters, or light blasting may be used in lieu of or to supplement hand scaling.

2.14 Site: Site shall mean the limits of the sediment and rock to be removed for this project, and shall include mooring and waterfront storage locations to be utilized during the contract's life.

2.15 Stabilization: If in-place stabilization is required, as determined by the Contracting Officer, rock bolting or other Contracting Officer approved stabilization techniques will be used. Stabilization necessitated, in the opinion of the Contracting Officer, by the rock geology, will be paid for at the appropriate unit price. Stabilization necessitated, in the opinion of the Contracting Officer, by the Contractor's blasting operations, shall be performed at the Contractor's expense.

2.16 Structures refer to the following: Standard construction timber frame, brick and concrete buildings, reinforced concrete structures, steel structures, roads and bridges, buried utilities and wells and aquifers.

3. LIABILITY

The Contractor's attention is called to insurance clauses required under the Contract listed in the Special Clauses, Including SC-5 INSURANCE (FAR 52.228-5), SC-5.1 REQUIRED INSURANCE IN ACCORDANCE WITH FAR 28.307-2, and SC-5.2 EXTRA INSURANCE COVERAGE. Additionally, the Contractor's attention is called to Contract Clause FAR 52.236-7, PERMITS AND RESPONSIBILITIES, which defines the Contractor's responsibilities relative to the references listed in the subsequent paragraphs. The Contractor shall assume all liability and hold and save the Government, its officers, agents, and employees harmless from any and all claims for personal injuries, property damages, or other claims arising out of or in connection with the transportation, storage, and use of explosives, blasting agents, and components under the contract, and claims arising out of the preblast and vibration surveys, including any attorney or legal costs incurred by the Government related to defense of such claims.

The Contractor shall process any and all claims arising out of said use of explosives promptly and notify the Contracting Officer within 24 hours of any receipt of any claim. All damage claims shall be acknowledged by the Contractor (or his agent) immediately, and the claim damage inspected within 24 hours following initial notification. The claim(s) shall be processed from the Contractor's standpoint (honored, denied, or compromised) within ninety (90) days after cessation of all blasting on the contract.

4. REGULATIONS AND REFERENCES.

The Contractor shall comply fully with all applicable sections of the following regulations:

a. Bureau Of Alcohol Tobacco And Firearms (ATF) 27 CFR Part 55 Title XI, Regulation of Explosives (18 U.S.C. Chapter 40; 84 Statute 952), of the Organized Crime Control Act of 1970 (84 Statute 922) and the Safe Explosives Act, Title XI, Subtitle C of Public Law 107-296, the Homeland Security Act of 2002.

b. Commerce in Explosives, Part 55 of Title 27, Code of Federal Regulations (implements the provisions of Title XI, Regulation of Explosives and is obtainable from the Internal Revenue Service as Publication 739).

c. U.S. Department of Transportation (DOT) 49 CFR Title 49, Parts 106, 107, 171-179, 383 and 390-399.

d. Safety and Health Regulations for Construction, Title 29, Labor Chapter XVII, Bureau of Labor Standards, Department of Labor, Parts 1910 and 1926 (published in Federal Register Volume 36, Number 75).

e. U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, dated 3 September 1996.

f. Applicable U.S. Coast Guard Regulations and State, county, municipal, or port authority codes, rules, regulations and laws.

g. Federal Register, Volume 36, November 10, 15 January 1971, Department of the Treasury.

h. Washington State Department of Labor and Industries (L & I), Chapter 296-52 WAC, Safety Standards for Possession & Handling of Explosives. Point of Contact for King County: Geraldine Woods, (360) 416-3037.

i. ISEE Seismograph Field Practice Guidelines (Appendix K, ISEE Blasters' Handbook, 17th Edition).

j. Streamflow statistics from USGS gauging station near project site:
http://nwis.waterdata.usgs.gov/nwis/nwismap/?site_no=12144500

5. OPERATIONAL BLASTING PLAN

The Operational Blasting Plan is the document developed by the Contractor that details general procedures, methods, and materials to safely accomplish the blasting work. The Operational Blasting Plan and any of its revisions must be approved by the Contracting Officer prior to use.

5.1 The Contractor shall submit an Operational Blasting Plan for review and Government approval 60 days prior to the date the Contractor wishes to commence drilling and blasting. If the initial submission of the plan is not acceptable, the Contractor shall revise and resubmit the plan within 15 days after receipt of the returned plan. The Contractor or the Contractor's agents may plan and discuss elements of the Operational Blasting Plan with the Contracting Office's technical staff prior to submission. The Operational Blasting Plan shall detail all safety elements and procedures to be employed by the Contractor to meet requirements of EM 385-1-1.

5.2 No blasting program shall be started until the Operational Blasting Plan has been reviewed and accepted by the Contracting Officer. The Operational Blasting Plan may be revised through the life of the contract. Revisions to the Operational Blasting Plan shall be submitted to the Contracting Officer for acceptance of the revision. The Contractor may utilize, or conduct, the approved revision only after three days have passed since that revision's approval. Acceptance of the Operational Blasting Plan or its revisions by the Contracting Officer will not relieve the Contractor of the responsibility for safety and producing satisfactory results.

5.3 The Operational Blasting Plan shall include as a minimum requirement the following items.

- a. Coordination with Puget Sound Energy (PSE), King County (KC), City of Snoqualmie (COS) and the Salish Lodge as to blasting and its effect on local business(es) operations and power production. This shall include, but not be limited to, weekly progress meetings to discuss the drilling and blasting schedules.
- b. Proposed method of transportation, storage and handling of explosives.
- c. Procedure for monitoring the blast operations and handling misfires.
- d. Size, spacing, and depth of blast holes; procedure and format of providing to the Government the drill monitoring information; type of explosives, blasting agents, primers, boosters, detonating line, and initiation system; the anticipated pattern, sequence and type of delays; method of loading and detonating, and the maximum number of holes to be detonated per blast; the anticipated peak particle velocity; the anticipated maximum peak positive airblast overpressure at the structure or structure nearest the blast; and, a description of the procedures to address the problems created by blasting. The specific forms for the Preblast Survey inventory, Shot Design Record and the Shot Record Addendum. The blasting pattern and parameters shall be reviewed by the Contractor for revision of the Operational Blasting Plan after initial blasts are complete. The Contractor shall include an example calculation using scaled distance formula to demonstrate that the proposed blasting method will not exceed peak particle velocity and airblast limitations at critical structures.
- e. Methods and plans for preventing damage to nearby facilities, including but not limited to Salish Lodge, intake structures, and PSE buildings. The Contractor's Blasting Consultant shall assist the Contractor in selection of appropriate measures and peak particle velocity and airblast limits for each structure.
- f. The type of blasting equipment to be used and verification of the current safety and operational status including calibration.
- g. The firm or experienced personnel to record the physical parameters and the means to determine the continuous and dependent monitoring locations; the type of airblast and vibration monitoring instrumentation to be used, manufacturer and verification of the required calibration, and certification; and, the specific form for recording the physical parameter data and variable information in the Shot Record Addendum.
- h. List of licenses, permits and/or clearances required, application date, and date of approval or anticipated approval by Federal, State, and local concerns.
- i. A format, both paper and digital (computer readable), for maintaining a Shot Design Record of individual blasts throughout the life of the job, that is designed to record pertinent data before, during, and after the blasting operation. See Shot Record form and example attached at end of specification section.
- j. Names and qualifications of specialists for vibration control analysis and airblast overpressure measurements. Refer to specifications for requirements. Names, addresses, and experience of all licensed blasters and users.
- k. Safety procedures including a plan showing location of warning signs and signals to be used and methods of controlling road traffic and communications and for the safe checking and handling of misfires. Corps of Engineers (COE), PSE, City of Snoqualmie, Snoqualmie Tribe and

Salish Lodge personnel must have 24 hour notice of a proposed blast. Refer to Washington State Department of Labor and Industries standards for blasting signals, WAC 296-52-67105, Table T-1, which lists the signals that must be used. A 30-minute warning must be sounded prior to the blast to ensure that all PSE employees have evacuated underground tunnels and shafts. All "all clear" must be given by COE, PSE, and Salish Lodge personnel before a blast can be detonated. After the "all clear" has been given, a 5 minute warning must be sounded This shall be coordinated by the Contractor and the COE.

- l. Name and address of Contractor's representative to which any claims for damage due to blasting shall be provided.
- m. Procedure for compliance with Environmental requirements of these specifications.
- n. Methods of controlling road traffic and communications. This shall include a provision to clear the work area along the right bank to vehicular traffic within 4 hours so that PSE can access their facilities.
- o. Explosive Manufacturer's catalog information and original product data sheets for products including explosives, blasting agents, detonating cord, blasting caps, boosters, primers, delays, connection system, and initiation system.
- p. Specifications for bulk storage vessels and transfer systems; drill frame delivery system, associated loading tubes and reel systems, electronic monitoring system, GPS equipment and location program, and measuring devices.
- q. Strategy for emergency contingencies including fire, vessel collision, and severe weather conditions endangering any floating plants with explosives on board. Lightning detection system, manufacturer, model number, and calibration procedure.
- r. Plan for containment and cleanup of spills of cartridges or free flowing, pourable explosives or bulk fluids, such as oils, gasoline, and diesel fuel.
- s. Plan for disposal for explosive packaging, boxes, bags, etc.
- t. Procedure and electronic monitoring deployment with differential GPS to locate and bound the rock areas to be blasted.
- u. Listing and dimension or sizing of equipment, such as the dredge plant, barges transporting explosives, drills and drill barges, tugs, and scows or pipelines.
- v. The plan shall be approved and signed by the Contractor and likely agents for the Contractor, such as the Blaster-in-Charge and shift foremen. A copy of the certificate of insurance shall also be included.

6. SHOT DESIGN RECORD

The Shot (Design) Record submittal is for quality control and record keeping purposes. Four paper copies and one digital format of the Shot Record shall be furnished to the onsite Contracting Officer's Representative prior to every shot. The Contractor shall submit the Shot Record more than four hours prior to drilling the round. A Shot Record Addendum shall be furnished by the Contractor to the Contracting Officer's Representative after completion of every shot. Each Shot Record shall include all necessary narratives, tabular data and sketches to detail the placed shot. Submission of any Shot Design Record and its Addendum shall not be

interpreted as the Government's acceptance of responsibility for the Contractor's individual blast shot, and shall not relieve the Contractor from full responsibility to perform the contract. The Shot Record shall include as a minimum requirement the following items.

- a. Each Shot Record shall be signed by both the Contractor's job site authorized representative and the Contractor's Blaster-in-Charge.
- b. The overall parameters of the shot shall be specified which include: the date and order number of the shot that day, the GPS lateral location of each hole and the lift elevations, the total weight of explosives to be shot, the total number of holes to be shot, the number and ascending time order of delays for the shot, maximum charge weight per delay for the shot, the closest approach to the continuous and the dependent monitoring locations, scaled distance for nearest structure of interest and the monitoring location(s), the estimated particle velocities and airblast overpressures calculated for nearest structure of interest and the continuous and required dependent monitoring locations, powder factors both in charge weight per cubic yard of material shot and in charge weight per foot of loaded hole, and the procedure for controlling flyrock (if any).
- c. The location of the shot area on a plan map of the project.
- d. Plan and section views of drill pattern including free face, burden, blasthole spacing, blasthole diameters, blasthole angles, lift height, stemming and subdrill depth. A large-scale plan map depicting the shot pattern, delays to be employed, and flyrock control.
- e. A tabular listing by hole describing: drillhole length, drillhole diameter, top and bottom hole elevation, water elevation anticipated at the time of shooting, subdrilling depth, stemming material and elevations, type of stemming separator, primer and/or booster elevations in the hole, delays in the hole, and the total charge weight of explosive elements for the entire hole, and charge weight per delay within the hole.
- f. An elevation sketch of each hole pattern, subdrilling, decking charges, locations of explosives and stemming, and the locations of primers and/or boosters.
- g. Four copies of the "Shot Record Addendum" shall be provided to the Contracting Officer's Representative within 24 hours of the shot or two hours before any subsequent shooting, whichever occurs first. Each Shot Record Addendum shall be signed by both the Contractor's job site authorized representative and the Contractor's Blaster-in-Charge. The Addendum shall list: the date and order number of the shot; any impediments or problems with the shot; methods or procedural changes to rectify blasting problems in future shots; physical parameter recording equipment data, including manufacturer, model, serial number, and the last calibration date; the peak values of particle velocity and airblast overpressure for the blast monitoring location(s); and, the name of personnel and other pertinent data on the physical parameter recording. Difficulties with the shot include, but are not limited to, any one or more of the following: an injury or a complaint of damage due to blasting, the Government stating that a significant aquatic impact occurred, a flyrock projectile thrown sizable distance, exceeding the contract's allowable particle velocity or airblast control value, the recording of either particle velocity or airblast that is 25% greater than its preshot estimate, an aborted or delayed shot, a misfire, any portion of the pattern not firing, and a delay being skipped. A brief narrative shall describe the cause of all difficulties, if any, and the means to avoid their future occurrence.

7. TEST BLASTING AND INITIAL PRODUCTION BLAST.

7.1 General: The Contractor's Blasting Consultant shall design the Test Blasts and initial Production blast to establish safe and optimum blast design. The Contractor shall submit a Test Blast Design` and Individual Shot Designs for the review and approval by the Government prior to drilling out the round. The initial Production blasts shall be the first ten Production shots, after which the Contractor shall consider revising the Operational Blasting Plan. Important concerns include aquatic impacts and limits of vibration and airblast overpressure. The blaster's expertise and the developments from early shots should be used to determine the most efficient pattern, load factor, firing sequence, the explosive charge type, size, overlying water depth, charge configuration, charge separation, stemming type and length, initiation methods, and emplacement conditions for production blasting, etc. Blasts shall be conducted and reported in strict accordance with the physical parameter monitoring procedures outlined in the sections of these specifications covering vibration and airblast control.

a. Test Blasting shall be conducted at rock locations designated for removal. The Contractor shall provide a minimum of 24 hours notice to the Government of any Test Blast and its approximate design. A Shot Design Record shall be provided by the Contractor for all Test Blasts. One dry land Test Blast and one underwater Test Blast shall be completed prior to the Production Blasting. Added Test Blasts prior to the Production Blasting are at the Contractor's option.

b. The Government has the option of requiring one additional dry land and one additional underwater Test Blasts. The added Test Blast(s) will be to resolve design and personnel safety, environmental protection, rock removal optimization, and physical parameters, when the Contractor requests deviations from provisions of the specifications or the current Operational Blasting Plan. The Test Blast(s) with an agreed design configuration may be required of the Contractor prior to Governmental approval of changes for Production Blasting and for revision to the Operation Blasting Plan.

c. Early Production shots are anticipated to have varied blast patterns by the Contractor to resolve the best design for rock removal that maintains safe conditions and minimize environmental damage.

d. The Blasting Consultant shall be on site to witness the test blasts and prepare a report containing his observations and providing recommendations for subsequent production blasts. The Contractor shall submit this report to the Government prior to drilling and loading the first production blasts following all test blasts.

7.2 Damage: Upon evidence of personal injury, damage to any structures, or intolerable environmental damage due to blast initiation, the blasting program shall cease and the Contracting Officer shall be notified. Blasting shall not be resumed until the probable cause of any harm or damage has been determined, the Contractor provides a written description of corrective measures, and the Contracting Officer has given written approval of the Contractor's corrective measures.

7.3 Blast Damage Report: The Contractor shall examine the structures of the preblast surveys within 24 hours after reports of damage or before the next blast, whichever is sooner, and make necessary adjustments to his blasting operations. A detailed report including photographs of any damage caused by blasting shall be submitted to the Contracting Officer within 24 hours.

8. OPERATIONAL BLASTING PLAN REVISION

The Contractor shall examine the results of the initial blasting, drilling and blasting rates, material excavation and removal production rates, progress reports, damage surveys, physical parameter

monitoring data, environmental compliance procedures, and other pertinent information to develop an optimized blast design. Changes such as mucking procedures, blasting patterns, hole diameters, weights of explosives, wiring, and charge emplacement shall be incorporated in the Operational Blasting Plan Revisions. Four copies of each Operational Blasting Plan's Revision pages with the revised production blasting procedures shall be submitted to the Contracting Officer. The Contractor shall only utilize materials and procedures contained within the Operational Blasting Plan or its revisions.

9. CESSATION OF BLASTING

Acceptance of the Operational Blasting Plan by the Contracting Officer and compliance of the Contractor with the Operational Blasting Plan shall not relieve the Contractor of the responsibility of protecting the environment, structures, and property. Blasting shall be suspended or terminated at the direction of the Contracting Officer in the event aquatic life cannot be protected or the Contracting Officer determines that personal injury or unsatisfactory property damage was incurred.

10. TRANSPORTATION, STORAGE, HANDLING, AND SECURITY OF EXPLOSIVES

10.1 General: . In the state of Washington, explosives storage and handling is enforced by the Department of Labor and Industries (L & I), Chapter 296-52 WAC. L & I enforces at a minimum the ATF storage regulations. ATF does not regulate either handling or transportation. Transportation of explosives is handled by the federal Department of Transportation. ATF handles storage and federal licensing for purchase, however in Washington one must have a state-issued license for handling.

The Contractor shall immediately report any missing explosives, explosive materials, blasting agents, etc. to the ATF and the Contracting Officer. In addition, the Coast Guard shall also have jurisdiction over all explosives handling on water and along the waterfront. The Contractor shall obtain approval from the Coast Guard for the waterfront facility to be used for loading explosives on vessels. When loading explosives at waterfront facilities, the Coast Guard shall be notified and allowed adequate time to be present to monitor the loading operations. No explosives will be allowed to stay aboard any vessel at night except if they are anchored in a Coast Guard designated explosive anchorage area and manned 24 hours a day with a standby tug in the vicinity of the anchorage area. All transportation, storage, handling, and security of explosives must also be in accordance with State and local regulations. In case of conflict between regulations of the regulatory entities, the more stringent will apply.

10.2 Responsibility: The Contractor shall be responsible for obtaining all licenses, permits and approvals, and for keeping the accounts and records, as well as for arranging the transportation and protection of all explosives on the project. Should the Contractor fail to comply with the above requirements, the Contracting Officer may order a suspension of that part of work involved until the deficiencies are corrected. The Contractor's attention is also directed to the subparagraph 2.0 "Liability" for additional specific liability to be assumed by the Contractor.

10.3 Personnel: Under the new Safe Explosives Act, all personnel proposed for involvement with explosives, prior to any involvement, shall undergo background checks by ATF to consider people as being either "responsible" or "prohibited". Those "prohibited" cannot work around explosives.

a. Blaster-in-Charge: The Blaster-in-Charge shall design, implement, and monitor the Contractor's blasting. The Blaster-in-Charge shall direct or load the drill holes with explosives,

attach the blasting caps, connect detonation cord, wire the individual holes for detonation, and initiate the blast. The Contractor shall submit licenses or certifications of qualifications and a resume of the proposed Blaster-in-Charge and blaster to the Contracting Officer 60 days prior to blasting. The Blaster-in-Charge and blaster(s) shall have a minimum of seven years experience respectively as Blaster-in-Charge and blaster.

10.4 Storage Facilities: Due to the proximity of the site to public buildings and utilities, Washington L & I, in enforcing ATF storage standards, would disallow storage. No amount would qualify under the Table of Distances. Explosives shall be delivered and attended while at the site, with the residual amounts returned to magazines off-site at the end of each shift. No explosives, blasting agents and blast accessories shall be stored on site.

10.5 Daily Summary: The Contractor shall keep a daily record of explosives used, brought on site, and returned to off-site storage. The inventory records shall be updated at the close of business each day. The record shall show the class and quantities of the explosive materials that were received and issued, the total remaining on hand at the end of each day, and the time and name of the personnel to whom materials were issued. The remaining stock shall be checked each day and any discrepancies that would indicate a theft or loss of explosive materials shall be reported immediately. The inventory records will be available for review upon request of the Contracting Officer.

10.6 Report of Loss: Should a loss or theft of explosives occur, all circumstances and details of the incident shall be reported within 24 hours to the nearest office of the ATF, the King County Sheriff's Department, local law enforcement authorities, and the Contracting Officer's Representative.

11. BLASTING REQUIREMENTS

11.1 Public Meeting: The Contractor shall provide a representative and specialist(s), that are qualified in blast vibration and airblast control and have familiarity with the plans and specifications, and who will be available to participate in public meetings. The Contracting Officer will arrange and conduct no more than two public meetings (that will require attendance of the Contractor's personnel) to better inform the public about planned drilling and blasting operations. The specialist(s) shall be prepared to answer questions about the magnitude of the expected seismic motion and airblast overpressure and their impact on the public, public property and private property.

11.2 Pre- and Post-blast Surveys

a. Rock to be Removed: The Contractor shall conduct pre-blast surveys of the elevation of rock in the limits of the proposed excavation as well as in the portion of the river directly in front of the intake of PSE's Powerhouse 2 (PH2). After each blast is completed, an additional survey in the intake area of PH2 must be done to determine if any rock from the blasting has migrated in front of the trash racks. If it is determined that rock from blasting has migrated into this area, it must be removed before any drilling or blasting activities can commence. At the completion of blasting activities, a survey of the excavated area shall be completed. Final quantities of removed rock (measured in cubic yards) shall be calculated from the pre- and post-blast surveys. These pre- and post-blast surveys must be approved by the Contracting Officers Representative.

b. Salish Lodge Employee Parking Lot: The Contractor shall inspect vehicles parked in the Salish Lodge Lot the day of a blast, both before and after blasting to determine if any vehicles were damaged due to blasting activities. In particular, condition of windshields, rear windows, hoods, roofs and trunks of cars should be noted. Repairs to vehicles damaged during blasting

activities shall be the responsibility of the Contractor. These pre- and post-blast surveys must be approved by the Contracting Officers Representative.

c. Puget Sound Energy Facilities: The Contractor shall conduct pre- and post-blast surveys of PSE's structures for every blast during the lifetime of the project. These pre- and post-blast surveys must be approved by the Contracting Officers Representative and coordinated with PSE.

11.3 Pre- and Post-blast Surveys of Structures in Area: The Contractor shall conduct pre-blast inspections within the designated survey zone, utilizing Government-obtained permits. Pre-blast survey limits shown on the drawings are the minimum limits (approximately 800 feet or less to rock removal locations) within which the Contractor shall conduct the inspections. These are the limits within which the Government will provide the Contractor with rights-of-entry to the properties. These limits are in no way intended to preclude the Contractor from surveying areas outside the limits to reduce the possibility of claims resulting from the Contractor's blasting operations. Structures to be included in the pre-blast survey include, but are not limited to: all PSE facilities, both above and below ground; and the Salish Lodge. The Contractor shall obtain right(s)-of-entry, for survey work the Contractor elects to perform outside of the designated area, and conduct the added inspection(s) at the Contractor's expense. The inspection method used shall be acceptable both to the Contractor's insurance company and the Contracting Officer. A copy of the preblast surveys shall be submitted to and approved by the Contracting Officer prior to beginning any blasting operations. A copy, including still photography from 35 mm film (digital camera not allowed), of the approved preblast surveys shall be forwarded to each structure's owner by the Contractor. The Contractor shall maintain the original of each survey until the contract's completion. Occupants of local buildings shall be notified by the Contractor prior to the commencement of blasting. Inspection of PSE facilities will be allowed only with an accompanying PSE representative.

a. Skilled, experienced building inspection personnel shall visit each structure and report the data required herein. Each structure shall be documented as to its construction, foundation type, condition, and closest distance to rock removal locations. The general condition and all observable defects of each structure shall be documented.

The preblast survey is a general description by floor sequence of the structure's construction and foundation type, structural condition, and description of attached structures and critical contents (such as main frame computers and medical equipment) of buildings that may be affected by blast vibration.

b. The interior inspection shall be a floor by floor, room by room process with each room designated and described (i.e. living room with plaster walls that are covered with wall paper, plastered and painted ceiling with plastered cove and wood molding at the junction of the cove and wall paper). Walls shall be numbered in a clockwise fashion 1,2,3,4 (there may be more than four walls, if so, state such and continue numbering) beginning with the wall to the left of the door by which you entered. Each wall shall then be inspected, noting the number of windows and doors. Note all cracks, holes, etc., around the windows, doors, wall corners and ceiling corners. Separation of dry wall joints or cracked plaster shall be noted. Room structures and fireplaces in a wall shall be examined for separation from the wall and for cracks in the trim, masonry, and/or plaster. Window moldings and floor and ceiling moldings shall be checked for openings in mitered joints, straight joints and for separations from wall, floor or ceiling. Glass panes shall be examined for cracks. A closet in a wall shall be inspected after the wall inspection. If a wall has no cracks, simply state "Wall _ - clear." Diagrams and sketches are helpful. Ceilings and floors shall be inspected with inspectors' back to wall 1. This insures uniformity. The floor condition shall be reported for openings between boards, loose, or squeaky boards, discoloration and general wear. If floor is covered with tile, examine tile for joint

separations, cracked tile, holes, general wear. If carpeted, state so and indicate that floor is not visible for inspection. The ceiling shall be examined for cracked, loose or hanging plaster, water discoloration and holes.

The attic shall be inspected as a room or series of rooms if so divided and finished. If unfinished, attention shall be given to the roof rafters and keel boards for separation. Also note cross bracing and knee walls and any open spaces where day light from the outside can be seen.

Stairways are considered as a unit going up. Describe right wall, left wall, ceiling. Stairs consist of tread and riser which are described for cracks, marred finish, etc.

The basement shall be inspected as a room or series of rooms if so divided and finished. The wall opposite the entry or stairway is wall 1, when entering the basement by stairway from the first floor. Proceed with inspection in clockwise fashion. Examine walls for cracks in mortar joints, cracks across block or stone, holes at pipe entry, cracks at juncture with next wall. Any evidence of settling shall be reported. Note the plates on top of the wall, are they uniformly level, and bolted to and in contact with the masonry wall or footing. Note water stains and seepage. In the floor inspection, note location of floor drains, any cracks, broken areas or holes in the floor, and evidence of water seepage. Also report how the floor was placed, and if it consists of uniform or broken or irregular sections. Check ceiling for types of covering, cross bracing between floor joists, cracked or broken joists, or rotted areas. Check water pipes, heat pipes, electrical conduit for any unusual circumstances. Only unusual conditions or defects of the ceiling and utilities need to be reported.

c. The exterior inspection shall begin at the main entrance and proceed in a clockwise direction inspecting each side in turn. Report the foundation conditions and check for cracks, holes, settling, and condition of mortar. State condition of masonry with regard to cracks, holes, poor mortar, shrinkage cracks, etc. If the structure is frame construction, describe the condition of siding, presence of cracks, openings at juncture of siding boards, warping, and paint condition (new, old, flaking, etc). State number of windows and doors and examine frames and casings for cracks, warping, openings. Fireplace, furnace, or chimney, shall be inspected for separation from wall, for cracks in masonry and joints, etc. Porches and attached structures shall be examined for level and settling. Check for separation at the junction with wall. Report cracked, separated and rotting boards. Describe the gutters and downspouts; check for general condition and drainage. Report if water drains onto roof, porch or side of house. Any unusual ground and soil conditions shall be noted (i.e. lot has a rock outcrop or 1 in 3 soil slope, slope failure, retaining wall inclined due to soil pressure, drainage problem, ponding of water).

Garages and other freestanding structures (such as retaining walls) shall be inspected on the exterior and on the interior as a room. All concrete walks, driveways, etc. shall be inspected for cracks, level conditions, holes, and defects.

d. Industrial structures, Silo/Elevators and special facilities, and office space shall be described relative to their present conditions and tolerance to vibration. Besides the inspection of walls, columns and stairwells, the Contractor shall survey the work areas and structures for distress. An inspection of accessible structures shall be made and a list of all structures, which could not be adequately surveyed, shall be completed. The dates of possible subsequent surveys and physical constraints prohibiting the survey shall be documented.

Heavy, oscillating or vibration-sensitive equipment shall be documented by the Contractor. The foundations and/or restraints of heavy equipment shall be inspected. The manufacturers listed tolerance to vibration, during use and when idle, shall be listed if the owner can provide the information. The maximum vibration and natural frequency of the equipment in operation shall

be documented when provided. Regular maintenance periods, worker break intervals, or downtime of the special equipment shall be recorded.

Commodity storage facilities that may be impacted by blasting shall be addressed by the Contractor for safety and continued operation during the blasting program.

e. A sample copy of a possible preblast survey form is attached at the end of this section. Additional blank, lined 8 1/2 x 11 inch pages shall be used for reporting lengthy or special comments and for sketches.

Still, 35-mm print photographs shall be made of any unusual conditions that are severe. For example, photograph a fireplace chimney settled because of an inadequate foundation, displaced cracks in the basement masonry, or separation in bearing walls. Video photography may be utilized to augment particularly large areas of poor condition, but shall not be used in lieu of the written reporting procedure.

12. MONITORING AND TECHNICAL REQUIREMENTS

12.1 Physical Parameter Monitoring: Both airblast overpressure and particle velocity shall be recorded for each shot at the monitoring locations. Monitoring locations shall include, the Plant Two trash racks and intake gates (one monitoring station); Control house and substation on the right bank (one monitoring station); Plant One's trash racks, penstock, and underground cavity (one monitoring station); and the Salish Lodge (refer to Plate C-7). The Contractor shall consider additional monitoring stations at locations approved by the Government. The Contractor may elect at the Contractor's expense to provide additional monitoring locations for any purpose. The Contractor shall provide the minimum number of seismographs required to accomplish the ground vibration and airblast monitoring specified here-in. Blasting seismographs shall be commercially manufactured instruments designed to specifically measure blast induced vibrations and airblast and capable of recording particle velocity for three mutually perpendicular components of vibration in the range generally found with controlled blasting.

a. Blast Monitoring Equipment: Equipment for particle velocity and air overpressure monitoring shall be 4-channel (1 overpressure and 3 seismic channels) units capable of digitally storing collected data. Equipment must be capable of printing ground motion time histories and summaries of peak motion intensities, frequencies and USBM RI8507 PPV--frequency plots. Printed report records must also include date, time of recording, operator name, instrument-number and date of last calibration.

1. Instruments shall have a flat frequency response between 2 and 250 Hz for particle velocity and from 2 to 200 Hz for air overpressure.

2. The digitizing sampling rate for peak particle velocity and air overpressure measurements shall be least 1,024 samples per second.

3. Seismographs shall be capable of performing a self-test of velocity transducers and printed event records shall indicate whether or not the sensor test was successful.

4. Seismographs used for compliance monitoring shall be capable of recording overpressure from 88 to 148 decibels (dB-L), and particle velocity from 0.005 to 5.0 in/sec.

5. Systems shall be capable of providing printed event reports that include all peak measurements, frequencies and complete waveform plots.

6. Seismographs shall have adequate memory to record events, on all measurement channels for a time period equal to maximum planned blast duration plus one second.

b. Vibration Control: The Contractor shall control vibration for every blast. The Contractor shall engage the services of a specialist(s) qualified in vibration control methods who is capable of analyzing the results obtained from instrumentation onsite. A minimum of 60 days prior to the start of blasting operations, the Contractor shall provide the Contracting Officer with the credentials of that seismic specialist including, but not limited to past experience, training and education. The Contractor shall provide, or contract for, sufficient seismographs to measure and record ground movements caused by each blast. Seismograph operators shall be qualified personnel capable of setting up instruments at designated locations to accurately record the blast.

The seismographs shall be placed at the locations specified here-in and at other locations selected by the Contractor. Blasting shall be controlled in such a manner that the maximum ground vibration level at any structure shall not exceed a particle velocity control value of 1.25 ips. The instrumentation shall record three orthogonal components (vertical, radial and transverse with respect to the location of the blast) of particle velocity direction (or shall have sufficient resolution of acceleration or displacement such that particle velocity can be readily and accurately determined from the records). The highest reading of the three directional components of vibration shall be used to compute the maximum vibration level. The record for each blast shall consist of seismograph records identified by instrument number, the location of instruments positively identified, the date, time and location of the blast, the amount of explosives used, the peak particle velocity and all other data necessary to adequately control blasting operations. The particle velocity data shall be included in the Shot Record Addendum. The Shot Record Addendum shall be submitted within 24 hours or 2 hours before the coming blast, whichever occurs first. The Contracting Officer shall be notified immediately when such intensity exceeds a peak velocity of 1.25 at a monitored structure. The Contractor shall submit a copy of the records in tabular paper and electronic form for each blast on an alternate week basis.

b. Airblast Control: The Contractor shall control airblast for every blast. The Contractor shall engage the services of a specialist qualified in making airblast overpressure measurements, analyzing the results onsite, and making airblast predictions for succeeding detonations. A minimum of 60 days prior to the start of blasting operations, the Contractor shall provide the Contracting Officer with the credentials of the airblast specialist(s) to include but not be limited to past experience, training, and education. Appropriate blasthole patterns, detonation systems, and stemming shall be used to prevent venting of blasts to minimize airblast and noise levels produced by blasting operations. The maximum peak positive airblast overpressure at any of the occupied structures, structures containing glass windows, vehicles, or vessels, moored or underway, shall not exceed the control value of 134 dB (0.0145 psi) for any shot. The overpressure limit shall be lowered if it proves too high based on damage or complaints. The airblast records from each blast identifying the date, time and location of the blast, the peak positive overpressure recorded, the monitoring position, and equipment information shall be included in the Shot Record Addendum. The Shot Record Addendum shall be submitted within 24 hours or 2 hours before the coming blast, whichever occurs first. The Contracting Officer shall be notified immediately when such intensity exceeds an overpressure of 0.007 psi at a monitored structure. The Contractor shall submit a copy of the records in tabular paper and electronic form for each blast on an alternate week basis.

c. Flyrock Control: Before the firing of any blast in areas where flying rock may result in personal injury or unacceptable damage to property or the work, the rock to be blasted shall be covered with approved blasting mats, soil, or other equally serviceable material, to prevent flyrock. Approved blasting mats shall consist of commercially manufactured steel wire rope

and/or rubber-tired mats. If flyrock leaves the construction site and lands on private property all blasting operations will cease until a qualified blasting consultant, hired by the Contractor, reviews the site and determines the cause and solution to the flyrock problem. Before blasting proceeds, a written report will be submitted to the Contracting Officer for approval. Reference Washington State Department of Labor and Industries Chapter 296-52 WAC, which has rules relating to flyrock prevention and the duties and responsibilities of the Blaster-in-Charge to take all the precautions listed in this section.

The Contractor shall, when requested by the Contracting Officer, make a video tape recording on VHS format of each blast. The video shall include coverage before, during, and after initiation of the shot that clearly depicts the layout of the shot, the behavior of the shot, and the resulting muck pile. Each shot record shall be cued in tape to identify the project, date, and shot number.

The Contractor shall provide appropriate video taping equipment.

12.2 Lightning Detection Equipment: The Contractor shall furnish, maintain, and operate lightning-detection equipment during the entire period of blasting operations and/or during the periods that explosives are stored at the site. The equipment shall be similar and equal to the Litton TMS/C Thunderstorm Monitor and Lightning Warning Instrument, as manufactured by Litton Industries, Inc., Environmental Systems Division, Camarillo, California. When the lightning-detection device indicates a blasting hazard potential, personnel shall be evacuated from all areas where explosives are present.

12.3 Stray Ground Currents: Prior to blasting, a test shall be made for stray ground currents. The Contractor shall furnish and use an AC-DC Blaster's Multimeter with sensitivity capable of reading 0.05 amperes and less and shall employ the proper techniques in conducting the tests. The maximum voltage to be used in the tests must be less than 0.05 volts. Blasting operations shall not be carried out when the sum of the readings by the AC and DC circuits equals or exceeds 0.05 volts (equal to 0.05 amperes when the meter is shunted) or is fluctuating. The Contractor shall take all precautions to prevent premature detonation from stray ground currents.

12.4 Blasting Pattern: The Contractor shall design the blasting system: to be productive; to be easy to load explosive materials in submerged, cased holes; to be safe in aquatic use near vessel traffic; and, to avoid aquatic life impacts outside of the fish barrier.

12.5 Shot Connections and Initiation: Only fully non-electric blasting systems shall be used. Cap and fuse method shall not be allowed. The initiation system may be any safe means to start the firing sequence, but the initiation system shall not use a method that has a kill zone outside the environmental barriers, such as detonation cord. These connection and initiation requirements shall be utilized, unless the Contractor recommends a safe procedure that is given written approval by the Contracting Officer.

13. DRILL BARGE(s)

It may be possible to accomplish all necessary drilling from shore. If a barge is found to be necessary, the drilling platform shall be capable of drilling in river conditions indigenous to the contract area. Drill rigs must be capable of drilling holes to a 3-inch diameter.

13.1 Emergencies: Provisions shall be made for jettisoning explosives in emergencies. A plan for recovery of jettisoned explosives shall be included in the Operational Blasting Plan.

13.2 Explosives on Deck: No explosive materials shall be stored on the boat or barge deck in the open, except for the single container that is to be loaded immediately in the blast holes. Any

explosive materials remaining on the deck shall be returned to the day magazine prior to the firing of any blast.

13.3 Detonating System: The firing line reel or spool shall be mounted on the rig in a manner so that it cannot be lost overboard. An electrical system connecting the loaded holes shall not be used on this project. An initiation system approved by the Contracting Officer shall be used for detonation. The initiation system may be any safe means to start the firing sequence, but the initiation system shall not use a method that has a kill zone outside the fish barrier.

14. SPECIFICATIONS OF EXPLOSIVES

14.1 Explosive materials shall be water resistant, possess low hazard sensitivity, and shall not produce high levels of toxic fumes.

14.2 Only fixed cartridge explosives shall be used. Flowable explosives or pumped slurries, placed directly in holes, shall not be used for this project.

a. Each submerged loaded hole shall be initiated with two separate downlines, caps, boosters and starters. At least one booster shall be secured in the hole with a mechanical lock in system or spider to prevent extraction of the booster or priming charge.

b. The top elevation of the explosive product shall be measured to check for voids and actual quantity loaded. Any voids or discrepancies in the quantity loaded shall be noted on blasting reports. A positive method shall be provided in each hole to separate the explosive materials from the stemming. The separation method shall assure the bottom design elevation of the stemming and that the stemming material does not separate nor fall into the annulus about the explosive agents nor mix into the explosive agents.

c. All loading tubes or hoses shall be equipped to be retracted from the bottom of the hole to the top of the product simultaneously as the explosive materials are loaded in the hole.

PREBLAST SURVEYSheet 1 of _____**Project:** THE BLASTED PROJECT**Surveyor (print)** _____**Survey Date:** _____**Surveyor's Title** _____**Building/Structure Inspected**

Street Address _____

Owner's name _____

City,State Zip _____

Street Address _____

Structure's Location _____

City,State Zip _____

Contact During Survey Visit: ___ Owner, ___ Occupant

___ Owner's Authorized Rep Rep's or Occupant's Name _____ (print)

Contact's Signature _____ **date** _____**General Structure Description**

Structure's Purpose _____

Number of Floors _____ Direction Main Entrance Faces _____

Lot condition (level, sloping, etc.) _____

Foundation (stone, block, etc.) _____ Condition _____

Elevation difference between highest and lowest foundation corners (inches) _____

Construction (frame, brick, etc.) _____ Condition _____

Chimney _____ Condition _____

Porches _____ Condition _____

Other Unusual Factors _____

Roof and Drainage

Roof _____ Condition _____

Gutters _____ Condition _____

Roof Drainage Adequate _____ Drains to _____

Lot Surface Drainage Flow Direction _____

Erosion near foundation _____, comment if yes _____

Exterior Inspection

Settlement (Y/N) _____, amount and comment if yes _____

Wall alignment N(NE) _____ E(SE) _____ S(SW) _____ W(NW) _____

Curb alignment _____

Sidewalks _____

Exterior Structures _____

Other Comments (critical contents, special vibration concerns) _____

Surveyor's Signature _____**Date** _____**Received by** _____**Date** _____

Contracting Officer's Rep

Floor _____

Plan Sketch

Preblast Survey (continuation)

Room _____ Inspection _____ Floor Size _____ Critical Contents (Y/N) _____

North Wall is Wall (#) _____

Number of Walls _____

General Description (use, walls painted, crit contents) _____

Wall 1 _____

Wall 2 _____

Wall 3 _____

Wall 4 _____

Wall _____

Wall _____

Ceiling _____

Floor _____

Wall ____	Wall ____	Wall ____	Wall ____	Wall ____	N(NE)	Ceiling	N(NE)	Floor

Room _____ Inspection _____ Floor Size _____ Critical Contents (Y/N) _____

North Wall is Wall (#) _____

Number of Walls _____

General Description (use, walls painted, crit. contents) _____

Wall 1 _____

Wall 2 _____

Wall 3 _____

Wall 4 _____

Wall _____

Wall _____

Ceiling _____

Floor _____

Wall ____	Wall ____	Wall ____	Wall ____	Wall ____	N(NE)	Ceiling	N(NE)	Floor

SHOT RECORD

Project: THE BLASTED PROJECT

Shot Number: _____

Estimated (Est) Blast Date _____, **Est Blast Time (Mil)** _____

YRMODEA-#

Est Weather Cond: Temp _____ EF; ___ Clear, ___ Partly Cloudy, ___ Overcast; Baro Pres _____ in Hg; Wind dir/speed _____ / _____ mph
for the Blast

Corners of Blast: _____
(N/E; EN/EW) _____

Total number of holes loaded: _____ Burden _____ ft Spacing _____ ft; Hole diam: _____ in

Max Hole depth: _____ ft Loaded explosive elev: highest _____ ft, lowest _____ ft Water surface elev _____ ft

Water surface above all charges (Y/N): _____ IF YES, Min water depth over highest charge: _____ ft

of holes with any charge above water: _____ # of holes with any charge below water: _____

Type(s) of explosive used: _____

Stemming type: _____ Min stemmed length: _____ ft Type of stemming separator: _____

Type of delay(s) used: _____; Minimum delay interval: _____ ms; Delay system: _____

Hole	Expl Wt (lb)	Delay (ms)	Hole	Expl Wt (lb)	Delay (ms)	Hole	Expl Wt (lb)	Delay (ms)	Decking(Y/N): _____
1	_____	_____	11	_____	_____	21	_____	_____	
2	_____	_____	12	_____	_____	22	_____	_____	
3	_____	_____	13	_____	_____	23	_____	_____	
4	_____	_____	14	_____	_____	24	_____	_____	
5	_____	_____	15	_____	_____	25	_____	_____	
6	_____	_____	16	_____	_____	26	_____	_____	
7	_____	_____	17	_____	_____	27	_____	_____	
8	_____	_____	18	_____	_____	28	_____	_____	
9	_____	_____	19	_____	_____	29	_____	_____	
10	_____	_____	20	_____	_____	30	_____	_____	

Detonation system: _____ Electric cap, _____ Nonel, _____ Other _____

Detonation circuit: _____ Series, _____ Parallel, _____ Other _____

Initiation system: _____ Electric cap, _____ Radio control, _____ Other _____

Total Weight of

Explosives used: _____ lb

Consecutive

Delay Period: _____ ms

Expl Wt
per vol: _____ lb/cu yd

Max Charge

Wt / Delay: _____ lb

Expl Wt per total
hole length: _____ lb/ft

Approx vol of rock shot: _____ cu yd

Flyrock protection (Y/N): _____ Type of protection: _____

Number of **monitoring** locations for shot: _____ Monitoring Type(s): _____ Particle Velocity, _____ Airblast

Nearest monitoring _____

Closest approach to nearest monitor: _____ ft

location (N/E; EN/EW) _____

Scaled Distance for nearest monitor: _____ fppl/2

Est Particle Velocity @ monitor: _____ ips

Est Airblast Overpressure @ monitor: _____ psi

Prior Minimum Scaled Distance: _____ fppl/2

Prior Max Particle Velocity: _____ ips

Prior Max Overpressure: _____ psi

Nearest structure (circle): Private Public Government

Residence Church School Office Utility Factory Other

Nearest structure's _____

Closest Approach: _____ ft

Est Particle Velocity: _____ ips

location (N/E; EN/EW) _____

Scaled Distance: _____ fppl/2

Est Airblast Overpressure: _____ psi

Shot Plan on sheet(s) _____ of _____

Shot Section(s) on sheet(s) _____ of _____

Name (print) _____

Signature _____

Contractor's representative

Contractor's Blasting Specialist

Date _____

+-----+
| Received
| Date _____
|
| Time _____
|
| Initial _____

SHOT RECORD ADDENDUM

Project: THE BLASTED PROJECT

Shot Number: _____

Actual (Act) Blast Date _____, **Act Blast Time (Mil)** _____

YRMODA-#

Act Weather Cond: Temp _____ °F; _____ Clear, _____ Partly Cloudy, _____ Overcast; Baro Pres _____ in Hg; Wind dir/speed _____ / _____ mph
for the Blast

Total Number of

Total Weight of

Max Charge

Holes Loaded: _____

Explosives used: _____ lb

Wt / Delay: _____ lb

Number of **monitoring** locations for shot: _____

Monitoring Type(s): _____ Particle Velocity, _____ Airblast

! Nearest Monitor # 1 Instrument Manu: _____ Instr #: _____ Instr Calibration Date: _____

Nearest monitoring _____ Closest approach: _____ ft Peak Overpressure: _____ psi

location (N/E; EN/EW) _____ Scaled Distance: _____ fpl/2 Peak Resultant Particle Velocity: _____ ips

Peak Resultant Part Velo @ 5 Hz: _____ ips Peak Component Part Velo (ips): T _____, V _____, L _____

! Monitor # _____ Instrument Manu: _____ Instr #: _____ Instr Calibration Date: _____

Nearest monitoring _____ Closest approach: _____ ft Peak Overpressure: _____ psi

location (N/E; EN/EW) _____ Scaled Distance: _____ fpl/2 Peak Resultant Particle Velocity: _____ ips

Peak Resultant Part Velo @ 5 Hz: _____ ips Peak Component Part Velo (ips): T _____, V _____, L _____

! Monitor # _____ Instrument Manu: _____ Instr #: _____ Instr Calibration Date: _____

Nearest monitoring _____ Closest approach: _____ ft Peak Overpressure: _____ psi

location (N/E; EN/EW) _____ Scaled Distance: _____ fpl/2 Peak Resultant Particle Velocity: _____ ips

Peak Resultant Part Velo @ 5 Hz: _____ ips Peak Component Part Velo (ips): T _____, V _____, L _____

! Monitor # _____ Instrument Manu: _____ Instr #: _____ Instr Calibration Date: _____

Nearest monitoring _____ Closest approach: _____ ft Peak Overpressure: _____ psi

location (N/E; EN/EW) _____ Scaled Distance: _____ fpl/2 Peak Resultant Particle Velocity: _____ ips

Peak Resultant Part Velo @ 5 Hz: _____ ips Peak Component Part Velo (ips): T _____, V _____, L _____

Were any blast damages apparent? (Y/N) _____ Damages include: an injury or a complaint of damage due to blasting for this or a prior shot, a flyrock projectile thrown sizable distance or to adjoining property, and the Government stating that a significant environmental impact occurred.

Did the shot develop any impediments? (Y/N) _____ Shot impediments include: an aborted or delayed shot, a misfire, any portion of the pattern not firing, a delay being skipped, and exceeding the contract's allowable particle velocity or airblast control values.

Did the recorded particle velocity or airblast of any monitor exceed 25% of either preshot estimate? (Y/N) _____

If any of the three questions were answered YES, explain the problem in detail. _____

Explain in detail the means to be taken on all future blasts to avoid the stated problem. _____

Continuation on sheet(s) _____ of _____

Name (print) _____

Signature _____

Contractor's representative

Date _____

Contractor's Blasting Specialist

+-----
| Received
| Date
|
| Time
|
| Initial

END OF SECTION

02250-22

APPENDIX A

Drill Hole Logs
Puget Power Report
Snoqualmie Falls Hydroelectric Project
Snoqualmie, Washington
Converse Project No. 91-35348-10
October 10, 1991

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LOG OF DRILL HOLE No. I-1

Sheet: 1 of 2

Project: Snoqualmie Falls Hydroelectric Project Feature: U/S Intake Structure Bearing: ---
 Coordinates: N190911 E1392874 Ground Elevation: 411.41 Angle with Horizontal: Vertical Type of Hole: NQ-3 core
 Total Depth: 33.0 feet Start: 3/12/91 Finish: 3/13/91 Water Level: See Table
 Logged by: Brad Piske Drilling Company: Longyear Drilling Driller: Walt Wilcox

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
410						<u>OVERBURDEN</u> Recent Alluvium (0.0-8.0) Silty sand, brown, fine grained, trace angular gravel; wet, loose		Drilled with Longyear HC-44, truck-mounted rig. Used 3-7/8" tricone casing advancer from 0.0-9.0' to install casing. Cored with NQ wire-line, hole dia. 2.98", core dia. 1.78" Estimated 0-10% drill water loss through interval cored.
405	5			SPT 2 3 4				
						<u>BEDROCK</u> Andesite (8.0-17.6) Gray to dark gray, porphyritic with fine to medium grained feldspar and pyroxene phenocrysts, very fine grained ground mass. Fresh to slightly weathered on joint surfaces. Hard, medium to widely jointed. Planar to slightly wavy joint planes at 5-10° and 35-60°, mostly rough, occasionally smooth, some with patchy, chlorite and clay coatings, some iron oxide staining. Many breaks are mechanical fractures along chlorite infilled joints. Fracture surfaces are typically planar, and smooth to rough. Joint infillings typically less than 0.01" to 0.1" thick.		Drilling Rate (min/ft) Run 1 3.0 Run 2 4.8 Run 3 5.0 Run 4 2.0 Run 5 6.6 Run 6 6.6
400	10	1	100 100	Q			Pressure test #1 0.01 gpm loss at 51 psi	10.0' Point Load Test - less than 2,000 psi 12.1' Point Load Test - 22,733 psi 13.5' Point Load Test - 27,092 psi
	15	2	100 100					
395						Basaltic Andesite (17.6-33.0) Dark gray to black, porphyritic, with fine grained feldspar and pyroxene phenocrysts, dark, very fine grained ground mass.	Pressure test #2	
	20	3	100 92					

Continued Next Page

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

King County, Washington

for HDR Engineering, Inc.

Project No.
91-35160

Figure No.
170

Converse Consultants NW Geotechnical Engineering
and Applied Earth Sciences

LOG OF DRILL HOLE No. I-1

Sheet: 2 of 2

Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
390	-					<p><u>BEDROCK</u> (continued) Basaltic Andesite (continued) Fresh to slightly weathered along joint surfaces. Hard, medium to very closely jointed at 5-20° and 45-80°. Occasional irregular networks of intersecting chlorite infilled joints. Most joints rehealed with chlorite, some joints slightly open. Chlorite infillings generally less than 0.01" to 0.1" thick. Occasional calcite infilling. Many breaks are mechanical fractures along chlorite infilled joints. Joint and fracture surfaces typically planar to slightly wavy and smooth to rough. Some polished and slicken-sided surfaces. Occasional curving joint or fracture. Iron oxide staining is common. Occasional patchy clay coating on joint and fracture surfaces.</p> <p>(22.6) slightly open joint at 35°, opening less than 0.1" wide</p> <p>(28.0-29.0) several joints at 5-10° and 40-50°, slightly wavy to wavy, rough, heavily iron oxide stained</p>	<p>Pressure test #2 0.16 gpm loss at 58 psi</p>	INTAKE LEVEL
	25	4	<u>100</u> 86					25.7' Point Load Test - 31,250 psi
395	-	5	<u>100</u> 53					29.8' Point Load Test - 18,917 psi
	30	6	<u>100</u> 80					
380	-					<p>Bottom of boring at 33.0 feet depth. Piezometer installed with slotted tip between 18.0'-19.0' depth. Backfilled with hole plug 18.0-33.0', pea gravel 2.0-18.0', hole plug 0.0-2.0'.</p>		
	35							
375	-							
	40							

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

King County, Washington

for HDR Engineering, Inc.

Project No.
91-35160

Figure No.
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Converse Consultants NW

Geotechnical Engineering
and Applied Earth Sciences

LOG OF DRILL HOLE No. I-2

Sheet: 1 of 3

Project: Snoqualmie Falls Hydroelectric Project Feature: U/S Intake Structure Bearing: ---
 Coordinates: N190982 E1392845 Ground Elevation: 428.24 Angle with Horizontal: Vertical Type of Hole: NQ-3 core
 Total Depth: 59.5 feet Start: 3/18/91 Finish: 3/19/91 Water Level: See Table
 Logged by: Brad Piske Drilling Company: Longyear Drilling Driller: Huey Briggs

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
425	5			SPT 50/5"		<u>OVERBURDEN</u> Fill (0.0-4.0) Sand and gravel, fine to coarse sand, fine to coarse gravel, some cobbles, scattered boulders; moist, loose		Drilled with Longyear HC-44, truck-mounted rig. Advanced boring with 3-7/8" tricone casing advancer from 0.0-18.0'
420	10			SPT 26, 50/3"		Glacio-Lacustrine Deposits (5.2-18.0) Clayey silt, brown, weathered, laminated to thinly bedded, trace to few, fine to coarse sand and gravel; moist, hard (10.0) grades gray, unweathered		NQ-3 core from 18.0-59.5', hole dia. 2.98", core dia. 1.78" Drills rough between 10-17' depth. Low recovery in Run #1 due to loss of soil portion of sample. Estimated 0-10% water loss through interval cored.
415								Drilling Rate (min/ft) Run 1 3.6 Run 2 2.6 Run 3 5.5 Run 4 5.0 Run 5 5.0 Run 6 5.4
410	15			SPT 50/1"				Run 7 5.2 Run 8 5.2 Run 9 3.6
		1	89 100	Q				Return Water 0-10 dark brown 10-59.5 dark gray
	20					<u>BEDROCK</u> Basaltic Andesite (18.0-59.5)		

Continued Next Page

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

King County, Washington

for HDR Engineering, Inc.

Project No.
91-35160

Figure No.
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Converse Consultants NW

Geotechnical Engineering
and Applied Earth Sciences

LOG OF DRILL HOLE No. I-2

Sheet: 2 of 3

Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
405	25	2	<u>100</u> 64			<p>BEDROCK (continued)</p> <p>Basaltic Andesite (18.0-59.5) Black, porphyritic, phenocrysts of feldspar and pyroxene, very fine grained ground mass. Medium hard to hard, extremely closely to medium fractured, most fractures planar smooth to rough, some slickensides, most fractures coated with calcite/chlorite. Occasional thin clay infilling.</p> <p>(18.0-24.0) medium fractured at 10-85°, planar, moderately smooth to rough, calcite and chlorite coatings (24.0-27.5) extremely closely fractured at 25° to 45°, rough to slightly smooth, chlorite and calcite infillings, originally tight fractures, mechanically broken (27.5-31.5) closely fractured (29.6) planar fracture at 75°, slickensided, coated with chlorite, calcite, and red clay (29.3) planar fractured at 25°, rough, coated with chlorite and gray brown clay (31.5-59.5) very closely to closely fractured at 50°-65°, 10°-30°, and 70°-90°, planar, smooth to slickensided, most fractures coated with chlorite and calcite, occasional coating of red clay, fractures predominantly planar, some curving. Near-vertical fractures at 80°-90° extend over 2' lengths.</p>		
400	30	3	<u>100</u> 55					
395	35	4	<u>100</u> 100					
390	40	5	<u>100</u> 46					
						Continued Next Page		

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

King County, Washington

for HDR Engineering, Inc.

Project No.
91 35160

Figure No.
171

Converse Consultants NW

Geotechnical Engineering
and Applied Earth Sciences

LOG OF DRILL HOLE No. I-2

Sheet: 3 of 3

Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
385		6	$\frac{100}{70}$			<u>BEDROCK</u> (continued) Basaltic Andesite (continued)		
	45	7	$\frac{100}{84}$					
380								
	50	8	$\frac{100}{82}$					
375								
	55	9	$\frac{100}{78}$					
370								
	60					Bottom of boring at 59.5 feet depth. Boring backfilled with bentonite chips.		

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

King County, Washington

for HDR Engineering, Inc.

Project No.
91-35160

Figure No.
171

Converse Consultants NW

Geotechnical Engineering
and Applied Earth Sciences

LOG OF DRILL HOLE No. I-3

Sheet: 1 of 5

Project: <u>Snoqualmie Falls Hydroelectric Project</u>	Feature: <u>Intake Structure</u>	Bearing: <u>---</u>
Coordinates: <u>N199026 E1392819</u>	Ground Elevation: <u>439.40</u>	Angle with Horizontal: <u>Vertical</u>
Total Depth: <u>82.5 feet</u>	Start: <u>3/14/91</u>	Finish: <u>3/15/91</u>
Logged by: <u>Brad Piske</u>	Drilling Company: <u>Longyear Drilling</u>	Driller: <u>Walt Wilcox</u>
		Water Level: <u>See Table</u>
		Type of Hole: <u>NQ-3 core</u>

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
						<u>OVERBURDEN</u>		Drilled with Longyear HC-44, truck-mounted rig.
						Colluvium (0.0-5.0)		Advanced boring with 3-7/8" tricone casing advancer to 28.0'.
435	5			SPT-1 | 5,10,25		Glacio-Lacustrine Deposits (5.0-25.0) Clayey silt, brown, weathered, trace coarse sand, trace fine gravel, thinly bedded to laminated; moist, hard		Drilled with NQ-3 wire-line core from 28' to 82.5'. Hole dia. 2.98", core dia. 1.78". Triple tube core barrel, 5' long.
430	10			SPT-2 | 27, 25/4"				Little to no drill fluid loss in cored interval.
425	15			SPT-3 8,11,20		(15.0) grades gray, unweathered		Note: all joint and fracture orientations are referred to in degrees from horizontal.
420	20							

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LOG OF DRILL HOLE No. I-3

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Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
415	25			SPT-4 20, 50/3"		<u>OVERBURDEN</u> (continued) Glacio-Lacustrine Deposits (continued) (20.0) few to little fine gravel		Drilling Rate (min/ft) Run 1 2.5 Run 2 2.4 Run 3 2.4
410	30	1	$\frac{100}{0}$	SPT-5 7, 50/3"		(25.0) predominantly fine to coarse, black angular volcanic gravel (28.0) weathered bedrock, predominantly rounded cobbles		
405	35	2	$\frac{100}{90}$			<u>BEDROCK</u> Basaltic Andesite (29.0-72.5) Dark gray to black, porphyritic, with fine to medium feldspar and pyroxene phenocrysts, very fine grained ground mass. Fresh to moderately weathered on joints surfaces, hard. Major joints rehealed with chlorite. Extremely close to closely spaced joints, wavy to planar, 10-70°, typically rough, occasionally smooth. Joints mostly chlorite and clay filled, rarely quartz filled. Many mechanical fractures along chlorite-filled joints. (31.0-38.0) very closely fractured at 20-30° and 60-70°, smooth, red clay- and chlorite-coated joints (36.8-43.0) closely fractured at 40-50° and very closely fractured at 10-20°		
400	40	3	$\frac{100}{70}$					

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
		3				<u>BEDROCK</u> (continued) Basaltic Andesite (continued)		Drilling Rate (min/ft) Run 4 3.0 Run 5 8.0 Run 6 3.7 Run 7 4.0 Run 8 2.6
395	45	4				(43.0-62.5) dominant fractures at 0-50°, closely to very closely spaced, smooth, planar to curved, with red clay and chlorite coatings in joints (43.3) planar fracture at 15°, rough, chlorite-coated		
390		5	<u>100</u> 0			(48.0-49.0) highly fractured zone		
	50	6	<u>100</u> 57			(50.0) irregular to planar intersection, fractures at 90° and 60-70°, chlorite-coated (51.0-52.0) very closely spaced, rough, curved fractures at 30-40°, chlorite-coated (52.0-62.5) closely spaced fractures at 50-60°, smooth, planar, red clay- and chlorite-coated		
385	55	7	<u>100</u> 78					
380	60	8	<u>100</u> 62			(57.5-62.5) red clay in fractures increasing		
						Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
375	65	8				<u>BEDROCK</u> (continued) Basaltic Andesite (continued) (60.0) smooth, planar fracture at 35°, red clay- and chlorite-coated (62.2) planar, smooth joint fracture at 20°, coated with quartz and chlorite (62.5-64.0) highly joint fractured, becomes extremely closely spaced at 64.0°, 10-40°, smooth to rough, planar, chlorite-coated (64.0-72.5) closely spaced planar joint fractures at 0-10° and 40-60°, red clay and chlorite coat- ings		Drilling Rate (min/ft) Run 9 3.2 Run 10 5.2
		9	<u>100</u> 34					
		10	<u>100</u> 38					
		11	<u>100</u> 99			(71.0-72.5) red clay content in joints increases (71.5-72.5) brecciated zone Andesitic Breccia (72.5-82.5) Reddish gray, porphyritic, phenocrysts of sub- hedral plagioclase and pyroxene, with angular inclusions, quartz filling in medium spaced fracture joints, rough, irregular to planar (73.0) planar quartz and chlorite-filled joint fracture, 45-50° and 60-70° (74.8-79.0) mechanical fractures, closely spaced, 5-20°, rough, irregular (74.8-75.2) closely spaced mechanical fractures at 10-20°, irregular, rough.		
370	70							
365	75	12	<u>100</u> 100					
360	80							

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
		12				<u>BEDROCK</u> (continued) Andesitic Breccia (81.5) joint fracture, slickensided, 50°, curving		
355	85					Bottom of boring at 82.5 feet depth. Piezometer installed, 1" diameter PVC riser pipe with slotted section between 71 and 73 feet depth. Boring backfilled with bentonite hole plug between 75 and 82.5 feet, pea gravel between 65 and 75 feet, and granulated benton- ite between 0 and 65 feet depth. Flush mount locking monument cover installed.		
350	90							
345	95							
340	100							

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LOG OF DRILL HOLE No. I-4

Sheet: 1 of 5

Project: Snoqualmie Falls Hydroelectric Project Feature: Intake Structure Bearing: ----
 Coordinates: N199089 E1392755 Ground Elevation: 443.34 Angle with Horizontal: Vertical Type of Hole: NQ-3 core
 Total Depth: 90.0 feet Start: 3/15/91 Finish: 3/16/91 Water Level: See Table
 Logged by: Brad Piske Drilling Company: Longyear Drilling Driller: Walt Wilcox

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
440	5			SPT-1 3,2,1		<u>OVERBURDEN</u> Fill (0.0-8.0) Sandy silt, dark brown, trace fine gravel; very moist, soft		Drilled with Longyear HC-44, truck-mounted rig. Advanced boring with 3-7/8" tricone casing advancer to 30.0'. Drilled with NQ-3 wire-line core from 30' to 90'. Hole dia. 2.98", core dia. 1.78". Triple tube core barrel, 5' long.
435	10			SPT-2 3,10,18		Weathered Glacial Till (8.0-15.0) Sandy silt, dark brown, some gravelly layers; very moist, very stiff		Estimated little to no drill fluid loss in cored interval, 0-20% in overburden.
430	15			SPT-3 13,17,22		Glacio-Lacustrine Deposits (15.0-30.0) Clayey silt, gray with rusty brown stains above 16' depth, trace sand and fine gravel, sub-angular, thinly bedded to laminated; moist, hard		Note: all joint and fracture orientations are referred to in degrees from horizontal.
425	20							

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Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
420	-			SPT-4 20,37 50/5½"		<u>OVERBURDEN</u> (continued) Glacio-Lacustrine Deposits (continued)		smooth drilling 0'-5' rough drilling 10'-15' smooth drilling 15'-30'
415	25			SPT-5 23, 50/5½"				
410	30			NQ-3 cored		Glacial Outwash (30.0-40.0) Sandy gravel with clayey silt lenses, gray, fine to coarse volcanic gravel		
405	35			NQ-3 cored		(35.0) some cobbles, interbedded clayey silt grades to sandy silt		
400	40					Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
400		1	$\frac{46}{0}$			<p>BEDROCK</p> <p>Basaltic Andesite (40.0-63.0) Dark gray to black, porphyritic with fine to medium grained feldspar and pyroxene phenocrysts in aphanitic ground mass. Slightly to moderately weathered on joint surfaces. Hard, close to very closely jointed. Smooth to rough, planar to irregular and curving joints at 0-90°. Most joints clay- and chlorite-coated, 0.01 to 0.1 inch thick, rarely calcite or quartz. Many mechanical fractures along chlorite-infilled joints. Some slickenside joint zones at all angles.</p>		Drilling Rate (min/ft) Run 1 3.2 Run 2 4.7 Run 3 3.4 Run 4 2.8 Run 5 2.8
395	45	2	$\frac{86}{46}$			(45.0-51.0) very closely spaced weathered fractures with clay coating (48.0-51.0) very closely spaced joints, major set slickensided at 30-40°		
	50	3	$\frac{100}{50}$			(50.7) breccia zone with clay- to gravel-size infilling		
390		4	$\frac{100}{70}$			(53.3-54.0) joints, smooth, irregular, 70-90°, chlorite- and clay-coated		
	55	5	$\frac{100}{17}$			(56.0-61.0) intersecting joints, 0-10° and 60-70°, slickensided, planar to irregular, chlorite-coated, close to very close		
385								
60								

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
380	65	5				<u>BEDROCK</u> (continued) Basaltic Andesite (continued) (61.0-63.0) joints, extremely closely spaced, planar, rough, calcite- and chlorite-coated		Drilling Rate (min/ft) Run 6 3.8 Run 7 4.6 Run 8 4.6 Run 9 6.8
		6	<u>100</u> 90					
375	70	7	<u>100</u> 100			Andesitic Breccia (63.0-90.0) Reddish gray, porphyritic with feldspar and pyroxene phenocrysts, in a sand- to silt-size matrix with volcanic clasts up to boulder size. Medium to widely spaced joints, irregular, major set 30° from 63' to 72' then irregular to 90°. Rock is moderately weathered on joint surfaces, hard. Inclusions often chlorite- infilled. Joints calcite- and clay-coated		
		8	<u>100</u> 100			(63.0-66.0) brecciated with angular inclusions (67.0-72.1) joints at 30°, planar to rough, cal- cite- and red clay-coated		
370	75	9	<u>100</u> 100			(71.0-76.0) breccia texture coarsens, with black andesite inclusions, close to medium fracture joints		
						(76.0-82.0) highly weathered inclusions and fracture joints at 5-75°, chlorite-coated, planar to irregular		
365	80					Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
360	85	10	$\frac{100}{96}$			<p><u>BEDROCK</u> (continued) Andesitic Breccia (continued)</p> <p>(82.0) grades to greenish black (82.0-90.0) medium spaced joints at 5-40°, chlorite-infilled, rough, irregular to curving</p>		<p>Drilling Rate (min/ft) Run 10 2.8 Run 11 3.4</p>
		11	$\frac{100}{78}$			<p>(85.0-90.0) very close to close fracture joints at 10-20°, smooth, planar, calcite- and chlorite-coated</p> <p>(88.0-89.0) very close joint fractures, slicken-sided with calcite, chlorite, red clay, 45-90°</p>		
355	90					<p>Bottom of boring at 90.0 feet depth. Borehole backfilled with bentonite hole plug.</p>		
350	95							
345								
	100							

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LOG OF DRILL HOLE No. I-5

Sheet: 1 of 3

Project: Snoqualmie Falls Hydroelectric Project Feature: U/S Intake Structure Bearing: ---
 Coordinates: N19°07' E139°27'29 Ground Elevation: 411.13 Angle with Horizontal: Vertical Type of Hole: NQ-3 core
 Total Depth: 43.5 feet Start: 3/20/91 Finish: 3/20/91 Water Level: See Table
 Logged by: Brad Piske Drilling Company: Longyear Drilling Driller: Huey Briggs

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
410	-					<u>OVERBURDEN</u> Recent Alluvium (0.0-8.0) Silty sand, brown, fine grained, roots; very moist, medium dense		Drilled with Longyear HC-44, truck-mounted rig.
	5			Ring 26,21,15				Used 3-7/8" tricone casing advancer from 0.0-9.0' to install casing.
405	-					grades gravelly		Cored with NQ wire-line, 1-7/8" I.D., hole dia. 2.98", core dia. 1.78"
	10	1	<u>100</u> 100	<u>RMR</u>		<u>BEDROCK</u> Basaltic Andesite (8.0-34.5) Dark greenish-black, porphyritic with phenocrysts of feldspar and pyroxene, very fine grained ground mass, slightly to moderately weathered. Medium hard to hard, loosely to medium fractured. Fractures are planar or irregular, slickensided to rough, chlorite and calcite films on most fractures.	Pressure test #1 0 gpm loss at 63 psi	Estimated 0% drill water loss from 0-21'. Between 21-34.5' 100% drill water loss. From 34.5-43.5 estimated 50% loss.
400	-	2	<u>100</u> 100			(9.0-13.5) closely fractured at 40° to 50° irregular, rough, coated with chlorite and calcite		Water loss between 21-22' depth.
	15	3	<u>100</u> 87			(13.5-24.0) closely to medium fractured, at 60°-70° and at 0-10°, planar to irregular, rough, chlorite and calcite coatings. Most low angle fractures are mechanical. Open fracture between 21' and 22' depth based on water loss.		Drilling Rate (min/ft) Run 1 Run 2 Run 3 Run 4 Run 5 Run 6 Run 7 Run 8
395	-							Return Water 0-5 dark brown 5-38.5 dark gray 38.5-43.5 very dark to blackish gray
20	-							

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Elev.	Depth	Run	% Rec. RQD	RMR	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
390	-	4	<u>100</u> 88			<u>BEDROCK</u> (continued) Basaltic Andesite (continued) (20.4 and 20.6) thin coatings of brown and gray clay on subhorizontal fractures (27.2) fracture at 10°-20°, planar, rough, coated with red clay (24.0-29.5) closely fractured at 10° to 40°	Pressure test #2 1.16 gpm loss at 73 psi	Slickensides at 25.0, 25.4, 25.8, 28.1, 28.7, 29.5
385	25	5	<u>100</u> 87			Andesite Breccia (34.5-43.5) Porphyritic andesite matrix with subrounded to subangular included fragments of andesite. Inclusions range from ___ to ___ inches in diameter and consist solely of volcanic rocks, slightly		
380	30	6	<u>100</u> 81			(29.5-43.5) closely to medium fractured, most fractures at 10°-30°, planar to irregular, rough to slickensided, most coated with chlorite or calcite (34.7) slickensided fracture at 5° (35.2) friable, broken zone along shear at 10°, shear is planar, rough, coated with chlorite. Broken zone is about ___ inch thick. (33.6) fracture at 10°, planar, slickensided, coated with chlorite and gray clay		
375	35	7	<u>100</u>					
		8	<u>100</u> 88					
40	-					<i>Continued Next Page</i>		

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Elev.	Depth	Run	% Rec. RQD	RMR	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
370	-					<u>BEDROCK</u> (continued) Andesite Breccia (continued)		
45	-					Bottom of boring at 43.5 feet depth.		
365	-							
	-							
	-							
	-							
	-							
50	-							
360	-							
	-							
	-							
	-							
	-							
55	-							
355	-							
	-							
	-							
	-							
	-							
60	-							

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LOG OF DRILL HOLE No. S-1

Sheet: 1 of 14

Project: Snoqualmie Falls Hydroelectric Project Feature: Intake Shaft Bearing: ---
 Coordinates: N199059.4 E1392481.1 Ground Elevation: 416.01 Angle with Horizontal: Vertical Type of Hole: NQ-3 core
 Total Depth: 265.0 feet Start: 3/20/91 Finish: 3/26/91 Water Level: See Table
 Logged by: Rich Larson Drilling Company: Longyear Drilling Driller: Nels Powell

Elev.	Depth	Run	% Rec. RQD	Soil Sample	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
415	-					<u>OVERBURDEN</u> Recent Alluvium (0.0-6.0) Silty sand, brown, trace gravel; slightly moist, loose		Drilled with Longyear HC-44, truck-mounted rig.
410	5							Advanced boring with 3-7/8" tricone casing advancer to 6.5'.
		1	<u>100</u> 26	<u>Q</u>		<u>BEDROCK</u> Basaltic Andesite (6.0-32.0) Dark gray to black, porphyritic, fine to medium grained phenocrysts of feldspar and pyroxene set in very fine grained ground mass. Slightly weathered along some joint planes, otherwise unweathered. Medium to very closely jointed. Most joints infilled and rehealed with chlorite, occasional calcite infilled joint. Some open joints. Iron oxide staining of joint and fracture planes common. Majority of core breaks are mechanical breaks along chlorite infilled joints. Chlorite joint infillings are typically less than 0.01" to 0.1" thick. Joint and fracture surfaces typically are slightly wavy to wavy, fewer are planar, and smooth to rough. Many of the mechanical fractures surfaces on chlorite rehealed joints are planar to slightly wavy, and smooth to polished and slickensided. Occasional very thin to patchy clay infillings or coatings to about 18'. Includes zones of very closely spaced, chlorite rehealed joints of variable width in irregular, intersecting networks.		Drilled with NQ-3 core from 6.5' to 265.0'. Hole dia. 2.78", core dia. 1.78". Triple tube core barrel, 5' long.
405	10	2	<u>100</u> 88					Clay coating or infilling in joints to depth of approx. 18' is interpreted to be result of soil infiltration from above rock surface into open joints
		3	<u>100</u> 42					Drilling Rate (min/ft) Run 1 6.8 Run 2 5.5 Run 3 5.3 Run 4 5.5
400	15							Note: all joint and fracture orientations are referred to in degrees from horizontal.
		4	<u>100</u> 60					
	20							

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
395		5	$\frac{100}{26}$			<p><u>BEDROCK</u> (continued)</p> <p>Basaltic Andesite (continued)</p> <p>(10.4) open planar joint at 0-5°, stained with iron oxides, trace clay coating, rough</p> <p>(13.2-14.2) joint, planar to slightly irregular at 80° to vertical, rough, irregularly coated with clay, iron oxide stained and slightly weathered</p> <p>(14.8-16.0) joint, planar to slightly wavy at 85° to vertical, rough, coated with clay, iron oxide stained and slightly weathered</p> <p>(17.5-18.0) joint, planar to slightly wavy at 70°, rough, infilled with clay, coated with chlorite, slight calcite, slight iron oxide stained and slightly weathered</p> <p>(19.0-19.5) joint, slightly curving at 80° to vertical, infilled with chlorite, broken by hand, slightly rough</p> <p>(24.0-24.3) joint at 70°, slightly wavy, coated with chlorite, slight iron oxide staining, smooth to polished with slickensides</p> <p>(26.8-27.1) shear at 75°, planar to slightly wavy, chlorite coated, slickensided at 0°, thin non-plastic gouge consisting of crushed chlorite</p> <p>(30.5) iron oxides completely filling and re-healing some joints, some very wavy and curving, calcite infilled joints</p>	<p>Pressure test #1</p> <p>0 gpm</p> <p>loss at</p> <p>66 psi</p>	Drilling Rate (min/ft)
								Run 5 5.6
								Run 6 6.6
								Run 7 4.9
								Run 8 6.8
		6	$\frac{100}{23}$			<p>Andesitic Breccia (32.0-51.9)</p> <p>Gray to dark gray, porphyritic, phenocrysts of subhedral plagioclase and pyroxene, volcanic clasts from fine gravel to boulders. Very fine grained ground mass. Clasts are subrounded to rounded, slightly weathered to medium-weathered near top of flow. Medium hard to hard. Medium to closely jointed. Most joints infilled with calcite, iron oxides, or chlorite. Infilling typically less than 1/16" thick. Most joint planes are wavy, fewer are planar. Joint surfaces mostly rough to slightly smooth. Many mechanical breaks along infilled joints or across core axis.</p>		Run 9 4.6
								Run 10 5.4
	25	7	$\frac{100}{15}$					No drill water loss in hole.
390								Run 8 dropped out of inner barrel. Retrieval resulted in mechanical breakage.
	30	8	$\frac{80}{NA}$					The Andesitic Breccia is darker in color, contains more and large plagioclase phenocrysts, contains breccia clasts (volcanic) and fewer chlorite infilled joints than the Basaltic Andesite. Fewer slicks and polished joint surfaces.
385								
		9	$\frac{71}{32}$					
	35							
380		10	$\frac{99}{90}$					
	40							

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
375	-	11	$\frac{100}{82}$			<p><u>BEDROCK</u> (continued) Andesitic Breccia (continued) (33.3) shear at 20°, planar, polished and slickensided, trace clay gouge (38.0) rock color changes, reddish brown to rusty hue due presence of irregular network of iron oxide infilling around clasts and in joint planes. Infilling less than 1/16" thick. Rusty color only along contacts or joints, main portion of rock still dark gray. Also occasional irregular shaped zones in core up to about 1/4" across that are filled with a soft, green, waxy, clay mineral. Probably a replacement or alteration product that infilled voids. (42.0) broken zone for 0.1-0.2', clay coatings (45.0) core quality increasing. Rock takes on reddish brown (maroon) hue. Most matrix colored, clasts are dark gray. (45.0-54.5) medium to widely jointed, most joint planes wavy and rough, some joints are planar. Most joints low angle 0-20°, occasional iron oxide stain or patchy chlorite coating.</p> <p>Andesite (51.9-61.9) Greenish gray, with zones of maroon hue, fine to medium grained phenocrysts of feldspar set in very fine grained ground mass. Slightly weathered to unweathered, hard. Medium to widely jointed, most joints at 10-30°, wavy to planar, rough. Rare, wavy hairline joints rehealed with calcite or chlorite (54.5-54.9) shear, rock crushed and broken. Some breaking probably mechanical. Fractures are polished and slickensided, slightly curving to irregular at 75-90°. (60.0) silty clay, maroon, slightly plastic, in seam, estimated to be 1/4" thick, hard when dry</p>	Pressure test #1	Can break Andesitic Breccia by hand along weak, infilled joint planes.
370	45	12	$\frac{80}{80}$					Run 9 and 10 slightly to moderately weathered, probable flow top, no soil horizon observed. Run 10 core quality increasing.
365	50	13	$\frac{97}{80}$				Pressure test #7 0.02 gpm loss at 74 psi	Drilling Rate (min/ft) Run 11 5.4 Run 12 4.8 Run 13 5.2 Run 14 4.4
360	55	14	$\frac{100}{92}$				Pressure test #6	Top of Run 12, 3" of recored rubble, cave. Run 13, 2" of caved and redrilled material at start of run.
60	-	-	-	-	-	Continued Next Page	-	-

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Elev.	Depth	Run	% Rec RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
355	-	15	$\frac{94}{72}$			<u>BEDROCK</u> (continued) Andesite (continued)	Pressure test #6 17 gpm loss at 118 psi, bottom at 265' depth	Probable clay seam, but disturbed by drilling; encountered at top of Run 15.
350	65	16	$\frac{100}{26}$			Basaltic Andesite (61.9-72.8) Dark gray to black, porphyritic, fine to medium grained phenocrysts of feldspar and pyroxene, set in very fine grained, dark colored ground mass. Occasionally, slightly weathered along joint planes, hard. Closely to very closely joint- ed. Most joints infilled and rehealed with chlorite, occasional calcite infilled joint. Ma- jority of core breaks are mechanical breaks along chlorite infilled joints. Chlorite joint infillings are typically less than 0.01"-0.1" thick. Mechanical fractures on rehealed joints are mostly planar to slightly wavy and smooth to slickensided. Includes zones of very closely spaced chlorite rehealed joints in irregular, intersecting networks.		(61.9) Indistinct contact between two flows? or variation within flow? Contact gradation.
345	70	17	$\frac{98}{80}$			(70.0-72.8) closely to very closely spaced, me- chanical fractures along chlorite infilled joints at 5-10°, planar. smooth to polished, almost all show slickensides		Drilling Rate (min/ft) Run 15 3.0 Run 16 5.4 Run 17 4.8 Run 18 ---
340	75	18	$\frac{98}{92}$			Andesitic Breccia (72.8-84.0) Maroon, to reddish brown to gray clasts of subrounded to subangular volcanic rock set in fine to medium grained matrix of porphyritic andesite. Slightly to medium weathered along joint planes, medium hard to hard. Closely to medium jointed at 0-30°. Most joints wavy and rough, occasional soil infilled joint. Common irregular void infillings of soft, green, moder- ately plastic clay up to 1/2" wide. (76.9-77.8) mechanical fracture, on green clay infilled joint at 75-85°, wavy, fracture plane is polished and slickensided, similar fractures at 79.1', 79.5', 80.0', 81.0' and 82.0'		
80						Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
335	-	19	<u>98</u> 98			BEDROCK (continued) Andesitic Breccia (continued) (83.1) joint at 40-45°, wavy, rough to slightly smooth, coated with chlorite, some slickensides, thin film of brown, silty soil; joint probably slightly open		Drilling Rate (min/ft) Run 19 4.8 Run 20 4.0 Run 21 4.2 Run 22 4.4
330	85	20	<u>100</u> 88			Andesite (84.0-91.2) Gray, porphyritic, fine to medium grained phenocrysts of plagioclase and pyroxene set in very fine grained ground mass. Slightly weathered along joint planes, hard. Closely to medium jointed at 20° and 40-50°. Patchy chlorite infillings, several joints with slight soil coatings, slight iron oxide stains		Contact with underlying Andesitic Breccia at 91.2' appears to be flow contact, somewhat gradational.
325	90	21	<u>100</u> 76			Andesitic Breccia (91.2-113.5) Maroon, to reddish brown to gray clasts of subrounded to subangular volcanic rock set in fine to medium grained matrix of porphyritic andesite. Slightly to medium weathered along joint planes, medium hard to hard. Closely to medium jointed at 0-30°. Most joints wavy and rough, occasional soil infilled joint. Common irregular void infillings of soft, green, moderately plastic clay up to 1/2" wide.		andesite clasts usually gray
320	95	22	<u>100</u> 86			(90.5) joint at 0-5°, wavy, rough, coatings of chlorite and soft green clay; clay is slickensided, patchy, brown silty soil infilling on joint plane	Pressure test #5 20 gpm loss at 126 psi, bottom at 265' depth	reddish brown to maroon matrix gives breccia a reddish color Most mechanical fractures along chlorite or green clay infilled joints.
100	-					Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
315	-	23	$\frac{100}{92}$			BEDROCK (continued) Andesitic Breccia (continued) (90.5-91.9) broken zone, along high angle joints at 60-90°, wavy, rough, irregular infillings of soft, green, moderately plastic clay; joint surfaces are slightly to moderately weathered with patchy coatings of brown, silt soil; joints probably slightly open (94.0) joint at 60°, slightly wavy, smooth rough, coating of chlorite and soft green clay, clay is slickensided, coating of brown silt with sand-sized particles of crushed rock; joint surface is slightly iron oxide stained and moderately weathered (95.0) joint at 5-10°, slightly wavy, rough, chlorite coated (98.8) joint at 0-10°, slightly wavy, rough, coated with chlorite, iron oxide stained, moderately weathered (103.0) joint at 50°, wavy, rough, very slight coating of silt (105.0) joint at 30°, planar, slightly rough, patchy coatings of chlorite and brown, silty soil (105.5) patchy talc coatings on mechanical fracture (106.8) mechanical fracture at 50°, along chlorite infilled joint; fracture surface is wavy, smooth and slickensided Basaltic Andesite (113.5-124.7) Dark gray to black, porphyritic, fine grained phenocrysts of plagioclase and feldspar set in very fine grained ground mass. Slightly weathered along joint planes, hard. Closely to very closely jointed, most joints infilled and rehealed with chlorite. Chlorite infillings typically 0.01" to 0.1" thick. Very thin coatings of talc. Joints at 5-50° and 60-90°, typically slightly wavy to planar. Mechanical fractures along chlorite infilled joints are often polished and slickensided.		Drilling Rate (min/ft) Run 23 4.0 Run 24 3.6 Run 25 3.2 Run 26 4.2
310	105	24	$\frac{100}{100}$					
305	110	25	$\frac{100}{86}$					Contact between Andesitic Breccia and Basaltic Andesite is sharp over about 1", tight, only slight iron oxide staining. Occasional chlorite rehealed joint in basaltic andesite can be broken by hand.
300	115	26	$\frac{100}{36}$					Note: Basaltic Andesite has fine to medium grained phenocrysts with about 1 foot of contact. Size of phenocrysts decreases with depth.
120	-	-	-			Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
295	-	27	<u>100</u> 31			<u>BEDROCK</u> (continued) Basaltic Andesite (continued) (114.1) joint at 35°, planar, smooth, chlorite coated, yellow and red iron oxides weathering products (114.9) joint at 45°, planar, polished and slickensided, patchy coating of silt- to fine sand-sized gouge (115.9) mechanical fracture at 50° on chlorite rehealed joint; planar, polished, slight iron oxide staining (116.1) joint at 60°, planar, slightly rough, chlorite coated, slight iron oxide staining (116.1) mechanical fracture at 50° on chlorite infilled joint; planar, polished and slickensided, patchy talc coatings (116.4) mechanical fracture at 50° on chlorite infilled joint; planar, polished, slickensided, patchy talc coatings (117.3) joint at 45°, planar, chlorite coated, polished and slickensided, patchy coating of silt- to fine sand-sized gouge or soil (118.2) joint at 70°, planar, polished, chlorite coated, patchy coating of sand- and silt-sized particles of gouge; slightly iron oxide staining (120.0) mechanical fracture at 40° along chlorite infilled joint; planar, polished, widespread coating of talc, talc is slickensided (121.9) mechanical fracture at 20-30° (broke by hand) on chlorite infilled joint, also some calcite infilling, polished, slickensided, widespread talc coating on fracture surface (124.5) extremely closely spaced chlorite rehealed joints at 10-25° Andesitic Breccia (124.7-150.6) Maroon, gravel- to cobble-sized clasts of volcanic rock set in porphyritic andesite matrix. Matrix includes fine to medium grained phenocrysts of plagioclase and pyroxene set in very fine grained ground mass. Slightly weathered along joint planes, hard. Medium to widely jointed. Joint planes typically wavy and rough. Some very wavy, rough, near-vertical joints. (134.5) joint at 0-5°, wavy, rough, patchy coating of reddish brown silt (138.5) joint at 70-75°, wavy, rough, patchy calcite coating		Most breaks are mechanical fractures along chlorite rehealed joints. Occasional chlorite filled joint can be observed to offset other chlorite infilled joints. Contact between Andesitic Breccia and overlying Basaltic Andesite is tight and slightly gradational over a couple of inches. Appears to be a flow contact. No weathering zones. (124.5-145) several lengths of core over 1.5' in length. Good quality rock as is typical of the andesitic breccia.
290	125	28	<u>100</u> 70					
285	130	29	<u>100</u> 100					
280	135	30	<u>100</u> 100				Pressure test #4 22 gpm loss at 135 psi, bottom at 265' depth	Drilling Rate (min/ft) Run 27 5.3 Run 28 4.2 Run 29 3.0 Run 30 3.1
140	-							

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
275	-	31	$\frac{100}{96}$			BEDROCK (continued) Andesitic Breccia (continued) (141.5) joint at 60°, planar, slightly rough, patchy coating of chlorite (145.0) closely jointed and mechanically frac- tured; near-vertical, wavy, rough joints		Some segments of core are gray colored. Low RQD caused by near-vertical joints along length of core.
270	145	32	$\frac{100}{38}$					Drilling Rate (min/ft) Run 31 3.8 Run 32 3.8 Run 33 4.4 Run 34 4.2
265	150	33	$\frac{100}{34}$			Basaltic Andesite (150.6-157.1) Dark gray to black, porphyritic, fine grained phenocrysts of plagioclase and pyroxene set in very fine grained ground mass. Slightly weath- ered along joint planes, hard. Closely jointed at 60-90° and 10-20°. Most joints infilled and rehealed with chlorite or calcite. Joint planes are wavy to planar and rough to slightly rough, or polished with slickensides.		Contact light, at 10-25°, faint, no indication of weathering.
260	155	34	$\frac{100}{68}$			Andesite with zones of Andesitic Breccia in short segments (157.1-194.4)		This section of Ande- sitic Breccia has mark- edly fewer clasts than above breccias, sections with few or trace clasts are classified as ande- sites. Core quality is good.
160	-	-	-			Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
255	-	35	<u>100</u> 98			<u>BEDROCK</u> (continued) Andesite (continued) Maroon to reddish gray to gray to greenish-gray porphyritic, fine to medium grained phenocrysts of plagioclase and pyroxene. Occasional clasts of volcanic rock. Slightly weathered to fresh. hard. Most breaks are mechanical fractures. Medium to widely jointed at 0-45°. Joints typically wavy to slightly wavy and rough. Occasional joint at 60-80°. Occasional planar, chlorite coated joint.		Long, unbroken pieces of core are common.
250	165	36	<u>100</u> 88			(166.5) joint at 35-40°, wavy, rough, coated with crushed chlorite (167.8) joint at 75-80°, wavy, rough		Occasional, irregular infilling of soft, green, moderately plastic clay. Clay infillings are not as common as in runs above.
245	170	37	<u>100</u> 96			(173.4-174.0) breccia		Drilling Rate (min/ft) Run 35 5.0 Run 36 --- Run 37 4.0 Run 38 4.4
240	175	38	<u>95</u> 95			(179.5) joint at 75°, planar, smooth, coated with chlorite and crushed chlorite	Pressure test #3 25.5 gpm loss at 144 psi, bottom at 265' depth	
180	-	-	-			Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
235	-	39	$\frac{100}{100}$			<u>BEDROCK</u> (continued) Andesite (continued)		Excellent core pieces up to 3.5' in length.
230	185	40	$\frac{100}{100}$			increasing proportions of volcanic lithic clasts		Only minor drill water losses to this depth. Several mechanical breaks at 0-5'.
225	190	41	$\frac{100}{100}$					Drilling Rate (min/ft) Run 39 4.4 Run 40 3.0 Run 41 3.2 Run 42 5.0
220	195	42	$\frac{76}{0}$			Basaltic Andesite (194.4-201.0) Dark gray to black to greenish-gray, porphyritic, fine grained phenocrysts of plagioclase and pyroxene in very fine grained ground mass. Slightly weathered to fresh along joint planes. Closely to very closely jointed. Most joints rehealed with chlorite, few with calcite. (195.3) joint at 25-30°, planar, polished, coated with chlorite, slickensided, trace iron oxide staining		Contact with overlying Andesite is sharp over 1-2". Very gradation and indistinct with underlying Andesite.
		43	$\frac{100}{92}$			(196.2) joint at 70°, planar, rough, chlorite coated, slightly iron oxide stained		(196.4-196.5) broken zone
200	-					<i>Continued Next Page</i>		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
215		43				BEDROCK (continued) Basaltic Andesite (continued)		Run 46, 1.2' of core not recovered.
						(196.5) joint at 45°, planar smooth, coated with chlorite, slickensides, trace greenish gouge in thin patches		Lost all drill fluid circulation at 212' depth. Estimated 45 gpm into hole with no return.
210	205	44	<u>98</u> 49			Andesite (201.0-219.4) Light greenish-gray, porphyritic, fine to medium grained phenocrysts of plagioclase and pyroxene. Slightly weathered to fresh on joint planes. Closely to medium jointed at 20-30° and 70-80°. Joints infilled and rehealed with chlorite and calcite. Bright green mineral		Run 48, retrieved 7" of cement grout at beginning of run 212.4-213.0', grout has angular chips of rock. Hole was grouted on _____ with _____ gallons of cement grout. If all grout remained in hole, grout should have been encountered between _____ and _____ feet depth.
						(201.9-202.5) maroon colored andesitic breccia fills scattered vesicles		Loss of most of grout indicates major open joint.
						(203.3-204.0) joint at 75° infilled with up to 1/10" of chlorite and calcite, slightly wavy		
205	210	45	<u>93</u> 0			(205.5) joint at 70°, planar, rough, coated with calcite and chlorite, slightly iron oxide stained, trace brown silty soil infilling		
		46	<u>48</u> 0			(205.9-219.0) extremely closely to very closely jointed; core broken into small fragments, some breaks probably mechanical; near-vertical, wavy, rough joints; most iron oxide stained; becomes moderately weathered at 207.9 to 213.0; discoloration extends from joint planes into rock		
		47	<u>90</u> 0			(209.5-212.0) near-vertical joint, iron oxide stained and infilled with soil, wavy, rough		Drilling Rate (min/ft) Run 43 7.0
		48	<u>100</u> 0			(212.0-213.0) near-vertical joint, iron oxide stained and infilled with soil, wavy, rough		Run 44 4.4
200	215	49	<u>58</u> 24			(218.0-218.7) joint at 85°, planar, smooth, heavy iron oxide staining	Pressure test #2 24 gpm loss at 152 psi, bottom at 265' depth	Run 45 5.3 Run 46 --- Run 47 --- Run 48 --- Run 49 4.2 Run 50 6.5
220		50	<u>100</u> 100			Andesitic Breccia (219.4-265.0) <i>Continued Next Page</i>		

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Elev.	Depth	Run	% Rec RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
195		50				BEDROCK (continued) Andesitic Breccia (continued) Pinkish gray to greenish-gray, gravel- to cobble-sized multi-lithic, multi-colored, angular to subrounded particles in matrix of sand-sized particles, tuffaceous. Slightly weathered to fresh on joint planes, hard. Medium to widely jointed at 5-45°. Slightly wavy to wavy, rough.		Best quality rock below broken zone.
		51	<u>100</u> 100					This is similar to the breccias seen in the forebay holes. Hard to discern matrix in places and if it has phenocrysts. This breccia appears to be a little more clastic with wider variety of particles.
190	225					(222.6) joint at 0-5°, slightly wavy, rough, patchy soil infilling		
		52	<u>98</u> 98					Run 52, 4.8 long stick of intact core.
								Run 54, 4.2' long stock of intact core.
185	230							
		53	<u>99</u> 99					Drilling Rate (min/ft) Run 51 5.6 Run 52 3.0 Run 53 3.8 Run 54 3.1
	235					(235.2) joint at 65-70°, slightly wavy, rough, patchy coatings of chlorite and calcite, possible very minor, brown silty soil infilling		
180		54	<u>100</u> 100					
240						Continued Next Page		

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
175		54				BEDROCK (continued) Andesitic Breccia (continued) (240.2) irregular infilling of soft, olive green, moderately plastic clay; does not extend across width of core (241.0-251.0) fewer clasts, grading to a porphyritic, fine to medium grained, greenish-gray andesite		Run 55, 4.1' long stick of intact core.
		55	<u>100</u> 92					Water loss continues. 100% water loss, probably mostly from broken zone around depth 212.
	245							Run 58, two sticks of core high quality rock.
170		56	<u>99</u> 99			(247.5-248.0) zone of irregular infillings of green, soft, moderately plastic clay; clay infillings up to about 1/2" thick; one infilling cuts across width of core; slight iron oxide staining on joint and fracture planes		Run 58 and 59, several mechanical joints at 0°.
								Drilling Rate (min/ft) Run 55 5.7 Run 56 4.9 Run 57 7.6 Run 58 4.3
	250							
165		57	<u>100</u> 67			(252.0-253.5) zone of irregular infillings of green, soft, moderately plastic clay (252.1) mechanical fracture at 70-90°, very wavy break on joints infilled with soft green clay, chlorite and patchy talc; polished and slickensided surfaces common (253.9) joint at 60°, coated with chlorite slightly wavy, locally polished (255.0) rock grading with more breccia clasts, more pinkish gray in color; reaction rims around some clasts		
	255							
160		58	<u>92</u> 92					
	260							

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Elev.	Depth	Run	% Rec. RQD	Q	Graphic Log	Classification and Physical Condition	Water Pressure Test Interval	Remarks
155	-	59	$\frac{100}{100}$			<u>BEDROCK</u> (continued) Andesitic Breccia (continued)		Drilling Rate (min/ft) Run 59 4.4
150	265					Bottom of boring, 265.0 feet depth. Piezometer installed, 1-inch I.D. PVC riser piper with slotted section between 258 and 260 feet depth. Boring backfilled with pea gravel between 200 and 265 feet depth and with gran- ulated bentonite between 0 and 200 feet depth.		
145	270							
140	275							
	280							

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SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO T 180 (1997) Moisture-Density Relations of Soils Using a 10-lb
Rammer and an 18-in Drop

AASHTO T 224 (1996) Correction for Coarse Particles in the Soil
Compaction Test

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136 (1996a) Sieve Analysis of Fine and Coarse Aggregates

ASTM D 422 (1963; R 1998) Particle-Size Analysis of Soils

ASTM D 1140 (1997) Amount of Material in Soils Finer than the No.
200 Sieve

ASTM D 1556 (1990; R 1996el) Density and Unit Weight of Soil in
Place by the Sand-Cone Method

ASTM D 1557 (1991; R 1998) Laboratory Compaction Characteristics
of Soil Using Modified Effort (56,000 ft-lbf/cu. ft.

ASTM D 2167 (1994) Density and Unit Weight of Soil in Place by the
Rubber Balloon Method

ASTM D 2487 (1998) Classification of Soils for Engineering Purposes
(Unified Soil Classification System)

ASTM D 2922 (1996el) Density of Soil and Soil-Aggregate in Place by
Nuclear Methods (Shallow Depth)

ASTM D 2937 (1994) Density of Soil in Place by the Drive-Cylinder
Method

ASTM D 3017 (1988; R 1996el) Water Content of Soil and Rock in
Place by Nuclear Methods (Shallow Depth)

ASTM D 4318

(1998) Liquid Limit, Plastic Limit, and Plasticity Index of
Soils

1.2 MEASUREMENT

1.2.1 Overburden Excavation

The unit of measurement for overburden excavation will be the cubic yard, computed by the average end area method from cross sections taken before and after the excavation operations. The volume to be paid for will be the number of cubic yards of material measured in its original position and removed from the excavation areas, including the excavation for ditches, gutters, and channel changes, when the material is acceptably utilized or disposed of as herein specified. The measurements will include authorized excavation of overburden within the limits of the work. The measurement will not include the volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade.

1.2.2 Rock Excavation

The unit of measurement for excavation will be the cubic yard, computed by the average end area method from cross sections taken before and after the excavation operations. The volume to be paid for will be the number of cubic yards of material measured in its original position and removed from the excavation areas, including the excavation for ditches, gutters, and channel changes, when the material is acceptably utilized or disposed of as herein specified. The measurements will include authorized excavation of rock within the limits of the work. The measurement will not include the volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade.

1.3 PAYMENT

Payment will constitute full compensation for all labor, equipment, tools, supplies, and incidentals necessary to complete the work.

1.3.1 Classified Excavation

Classified excavation will be paid for at the contract unit prices per cubic yard for overburden excavation and per cubic yard for rock excavation.

1.4 DEFINITIONS

1.4.1 Satisfactory Materials

Satisfactory materials shall comprise any materials classified by ASTM D 2487 as *GW*, *GP*, *GP-GM*, *GW-GM*, *SW*, *SP*. Satisfactory materials for grading shall be comprised of stones less than 8 inches, except for fill material for pavements which shall be comprised of stones less than 3 inches in any dimension.

1.4.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills; trash; refuse; backfills from previous construction; and material classified as satisfactory which contains root and

other organic matter or frozen material. The Contracting Officer shall be notified of any contaminated materials.

1.4.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic. Testing required for classifying materials shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

1.4.4 Degree of Compaction

Degree of compaction required, except as noted in the second sentence, is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum density. Since ASTM D 1557 applies only to soils that have 30 percent or less by weight of their particles retained on the 3/4 inch sieve, the degree of compaction for material having more than 30 percent by weight of their particles retained on the 3/4 inch sieve shall be expressed as a percentage of the maximum density in accordance with AASHTO T 180 Method D and corrected with AASHTO T 224. To maintain the same percentage of coarse material, the "remove and replace" procedure as described in the NOTE 8 in Paragraph 7.2 of AASHTO T 180 shall be used.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Product Data

Earthwork; G, RE.

Procedure and location for disposal of unused satisfactory material. Blasting plan when blasting is permitted.

Notification of encountering rock in the project. Advance notice on the opening of excavation. Advance notice on shoulder construction for rigid pavements.

Test Reports

Testing; G, RE.

Within 24 hours of conclusion of physical tests, 3 copies of test results, including calibration curves and results of calibration tests.

Certificates

Testing; G, RE.

Qualifications of the commercial testing laboratory

1.7 CLASSIFICATION OF EXCAVATION

Excavation specified shall be done on a classified basis, in accordance with the following designations and classifications.

1.7.1 Overburden Excavation

Overburden excavation shall include the satisfactory removal and disposal of all materials not classified as rock excavation.

1.7.2 Rock Excavation

Rock excavation shall include blasting, excavating, grading, and disposing of material classified as rock and shall include the satisfactory removal and disposal of solid rock; rock material that is in ledges, bedded deposits, and unstratified masses, which cannot be removed without systematic drilling and blasting; and firmly cemented conglomerate deposits possessing the characteristics of solid rock impossible to remove without systematic drilling and blasting. The removal of any concrete or masonry structures, except pavements, exceeding 1/2 cubic yard in volume that may be encountered in the work shall be included in this classification. If at any time during excavation, the Contractor encounters material that may be classified as rock excavation, such material shall be uncovered and the Contracting Officer notified by the Contractor. The Contractor shall not proceed with the excavation of this material until the Contracting Officer has classified the materials as overburden excavation or rock excavation and has taken cross sections as required. Failure on the part of the Contractor to uncover such material, notify the Contracting Officer, and allow ample time for classification and cross sectioning of the undisturbed surface of such material will cause the forfeiture of the Contractor's right of claim to any classification or volume of material to be paid for other than that allowed by the Contracting Officer for the areas of work in which such deposits occur.

1.8 BLASTING

Blasting shall be performed as specified in Section 02250. The Contractor shall submit a Blasting Plan and obtain written approval prior to performing any blasting. The plan shall contain provisions for storing, handling and transporting explosives as well as for the blasting operations. The Contractor shall be responsible for damage caused by blasting operations.

1.9 UTILIZATION OF EXCAVATED MATERIALS

Unsatisfactory materials removed from excavations shall be disposed of in designated waste disposal or spoil areas. Satisfactory material removed from excavations shall be used, insofar as practicable, in the construction of fills, embankments, subgrades, shoulders, bedding (as backfill), and for similar purposes. All excavated material not used for backfill shall be hauled to a designated disposal site that exists and is located about 1.5 miles from the project site. No excavated material shall be disposed of to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.2 GENERAL EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Excavated classified material not used in any project features shall be stockpiled in designated staging/stockpiling area until sufficiently drained of water to transport over the county highway to the disposal site at Glacier Sand and Gravel commercial pit located about 1.5 miles from the project. Contractor shall be responsible for road clean-up of any material that escapes during haul to disposal site. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING.

3.2.1 Ditches, Gutters, and Channel Changes

Excavation of ditches, gutters, and channel changes shall be accomplished by cutting accurately to the cross sections, grades, and elevations shown. Ditches and gutters shall not be excavated below grades shown. Excessive open ditch or gutter excavation shall be backfilled with satisfactory, thoroughly compacted, material or with suitable stone or cobble to grades shown. Material excavated shall be disposed of as shown or as directed, except that in no case shall material be deposited less than 4 feet from the edge of a ditch. The Contractor shall maintain excavations free from detrimental quantities of leaves, brush, sticks, trash, and other debris until final acceptance of the work.

3.3 SELECTION OF BORROW MATERIAL

Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from the borrow areas selected by the Contractor or from approved private sources. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, pay royalties and other charges involved, and bear the expense of developing the sources, including rights-of-way for hauling. Borrow material from approved sources on Government-controlled land may be obtained without payment of royalties. Unless specifically provided, no borrow shall be obtained within the limits of the project site without prior written approval. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation.

3.5 GRADING AREAS

Where indicated, work will be divided into grading areas within which satisfactory excavated material shall be placed in embankments, fills, and required backfills. The Contractor shall not haul satisfactory material excavated in one grading area to another grading area except when so directed in writing.

3.9 SUBGRADE PREPARATION

3.9.1 Construction

Subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, disking, and any moistening or aerating required to

obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Rock encountered in the cut section shall be excavated to a depth of 6 inches below finished grade for the subgrade. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and the entire subgrade shall be shaped to line, grade, and cross section and compacted as specified.

3.9.2 Compaction

Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Except for paved areas, each layer of the embankment shall be compacted to at least 90 percent of laboratory maximum density.

3.9.2.2 Subgrade for Pavements

Subgrade for pavements shall be compacted to at least 95 percentage laboratory maximum density for the depth below the surface of the pavement shown.

3.9.2.3 Subgrade for Shoulders

Subgrade for shoulders shall be compacted to at least 90 percentage laboratory maximum density for the depth below the surface of shoulder shown.

3.10 SHOULDER CONSTRUCTION

Shoulders shall be constructed of satisfactory excavated or borrow material or as otherwise shown or specified. Shoulders shall be constructed as soon as possible after adjacent paving is complete. The entire shoulder area shall be compacted to at least the percentage of maximum density as specified in paragraph SUBGRADE PREPARATION above.

Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Shoulder construction shall be done in proper sequence in such a manner that adjacent ditches will be drained effectively and that no damage of any kind is done to the adjacent completed pavement. The completed shoulders shall be true to alignment and grade and shaped to drain in conformity with the cross section shown.

3.11 FINISHING

The surface of excavations, embankments, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. Gutters and ditches shall be finished in a manner that will result in effective drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing materials.

3.13 TESTING

Testing shall be performed by an approved commercial testing laboratory. Field in-place density shall be determined in accordance with ASTM D 1556, ASTM D 2167, or ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556. ASTM D 2922 results in a

wet unit weight of soil and when using this method ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017; the calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Contracting Officer. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced and recompacted to meet specification requirements. Tests on recompacted areas shall be performed to determine conformance with specification requirements. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

3.13.1 Fill and Backfill Material Gradation

One test per 1000 cubic yards stockpiled or in-place source material. Gradation of fill and backfill material shall be determined in accordance with ASTM C 136, ASTM D 422, and ASTM D 1140.

3.13.2 In-Place Densities

- a. One test per 500 square yards, or fraction thereof, of each lift of fill or backfill
- c. One test per 200 linear feet, or fraction thereof, of each lift of embankment or backfill for roads.

3.13.3 Check Tests on In-Place Densities

If ASTM D 2922 is used, in-place densities shall be checked by ASTM D 1556 as follows:

- a. One check test per lift for each 2000 square yards or fraction thereof, of each lift of fill or backfill .
- c. One check test per 800 linear feet, or fraction thereof, of embankment or backfill for roads.

3.13.4 Moisture Contents

In the stockpile, excavation, or borrow areas, a minimum of one test per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer.

3.13.5 Optimum Moisture and Laboratory Maximum Density

Tests shall be made for each type material or source of material including borrow material to determine the optimum moisture and laboratory maximum density values. One representative test per 1000 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

3.13.6 Tolerance Tests for Subgrades

Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

3.14 SUBGRADE AND EMBANKMENT PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No base course or pavement shall be laid until the subgrade has been checked and approved, and in no case shall base, surfacing, or pavement be placed on a muddy, spongy, or frozen subgrade.

END OF SECTION

Appendix A follows

APPENDIX A
REPORT ON GEOTECHNICAL SERVICES

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18 West Mercer
Suite 300
Seattle, Washington 98119
(206) 285-5200 TEL
(206) 285-6231 FAX

REPORT ON GEOTECHNICAL SERVICES
Snoqualmie Falls Hydroelectric Project
Snoqualmie, Washington

Prepared for:
Puget Sound Power & Light Company

Converse Project No. 91-35348-01

October 10, 1991



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October 10, 1991

91-35348-01

Puget Sound Power & Light Company
Post Office Box 97034 OBC-11S
Bellevue, Washington 98009-9734

Attention: Mr. Wayne Porter

Subject: **REPORT ON GEOTECHNICAL SERVICES**
Snoqualmie Falls Hydroelectric Project
Snoqualmie, Washington

This letter report summarizes the results of our field explorations between approximate stations U-8 and U-12 along the southern bank of the Snoqualmie River. The purpose of our work was to explore the surface and subsurface conditions in this area to determine if fill soils were present. Our understanding of the issues involved in this project was based on your letter to us dated September 20, 1991. Verbal authorization to complete this work was received from you on September 27, 1991.

Project Description

We understand that the City of Snoqualmie believes that the constriction in the channel of the Snoqualmie River, between about stations U-8 and U-12, is a result of past fill placement along the slope and bank on the southern side of the river. If this is so, they have asked Puget Power to mitigate the situation by removing this fill. The area in question was explored by geological reconnaissance and by excavations into the face of the slope.



Field Explorations

Our exploration program consisted of a preliminary site visit on September 25, 1991 to observe the general site features along the southern bank of the river, to meet with Mr. Glen Simmons, Plant Manager of the hydroelectric facility, and to review Puget Power's photograph collection, which shows the general area between about 1910 and 1911. On October 2, 1991, a second site visit was made to map the significant geological and geomorphological features within the area of interest and to complete a subsurface exploration program.

The subsurface exploration program consisted of excavating three trenches, designated TP-16, TP-17 and TP-18, on the face of the slope to observe the subsurface soils. The trenches were excavated with a rubber-tire Case 850E extend-a-hoe supplied by Puget Power. The locations of the trenches are shown on the Site and Exploration Plan, Figure 1. Subsurface conditions observed in the trenches are shown on the geologic profiles, Figures 2 through 4. The profiles represent our interpretation of the conditions observed in the field.

An engineering geologist from our firm was present throughout the field work to observe the explorations and to complete the geologic mapping of the project area. Soils were classified in general accordance with ASTM D-2488, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)".

Surface Conditions

The southern bank of the Snoqualmie River between about stations U-8 to U-12 is typically steep, with slopes varying between about 1½H:1V (horizontal to vertical) to 1H:1V with occasional near-vertical sections along the toe of the slope. The slopes were noted to flatten in the upstream direction with a distinct terrace topography. The topography observed during our site visits was generally consistent with the topography shown in photographs taken of the area in 1910 and 1911.

Vegetation along the slope generally consisted of mature maples and conifers interspersed among thick brush. The maples and conifers were estimated to be 50 to 75 years old. Several partially decayed stumps, about 3½ to 4 feet in diameter, were noted along the face of the slope. These stumps are the remains of past logging operations. Based on photographs taken of the area in 1910 and 1911, which appeared to show the trees prior to logging, the trees were likely cut down shortly after 1911. We noted that no soil had been placed around the stumps on the face of the slope. The stumps on the lower portion of the slope have been undermined on the downslope side.

Site Geology

Our understanding of the geology along the southern bank of the Snoqualmie River is based on subsurface and surface conditions observed during our field exploration. Four principal soil units were observed in the project area. These soil units are described below in order from youngest to oldest. Figure 1 shows the distribution of the soil units in the project area and the locations of geologic profiles. Figures 2 through 4 show geologic profiles through the hillside at the trench locations.

Fill

Man-placed fill soils were observed along the crest of the slope and in the flat-lying area to the south of the crest of the slope. Fill typically consisted of medium dense, silty sand with gravel with various amounts of cobbles and wood debris. About 2 to 3 feet of fill was encountered at the top of the slope in trenches TP-16 and TP-17. Fill was not encountered in trench TP-18. It was likely that the fill had been placed in association with the road along the top of the slope.

Colluvium

A thin layer of colluvium was observed to cover most of the upper and mid-portions of the slope along the river. Colluvium is a product of surficial soils that have been weathered from the underlying native soils and have been deposited downslope by gravity. The colluvium generally consisted of loose

to medium dense, silty sand to gravelly sand with various amounts of cobbles and scattered boulders to 6 feet in diameter. About 1 to 2 feet of colluvium was encountered in the trenches.

Recent Alluvium

Recent alluvial soils were observed to mantle the lower portion of the slope along the river. The recent alluvium was deposited along the banks of the Snoqualmie River during flood periods. Recent alluvium generally consisted of loose, sand and gravel with cobbles, and boulders to 8 feet in diameter. Exposures of recent alluvial soils were observed to extend upslope about 5 to 10 feet above the river.

Glacial Deposits

Glacial soils were observed to comprise the major portion of the slope along the river. Glacial soils were deposited in front of the advancing glaciers in meltwater streams, impounded lakes, or directly in front of the advancing ice as till. These deposits were subsequently overridden by the advancing glaciers to produce a very dense deposit. Glacial soils exposed on the slope and observed in the trenches consisted of glacial outwash, sub-glacial outwash, and glacial till. The outwash generally consisted of dense, fine to medium sand with varying amounts of silt and was observed in trench TP-18. The sub-glacial outwash typically consisted of very dense, poorly bedded, gravel, cobbles and scattered boulders in a fine-grained matrix with occasional irregular layers of glacial till and was observed in all three trenches. The glacial till generally consisted of a very dense, unsorted mixture of silt, sand, gravel, and scattered cobbles and was observed in trenches TP-16 and TP-17.

Geomorphology

In general, rivers usually erode along the outside portion of a meander where the current is at a maximum, and sediments carried by the river are usually deposited on the inside portion of the meander where the current is at a minimum. Where State Route SR-202 crosses the Snoqualmie River, the river

undergoes about a 40-degree bend or meander. The outer portion of the meander is on the southern bank of the river, just downstream of the highway bridge. Erosion of the southern bank of the river has occurred in this area. As the Snoqualmie River completes the meander, the current is directed across the channel to the north bank. Erosion of the southern bank ceases and deposition of sediments occurs on the southern bank just downstream of the meander. This flow geometry has resulted in the observed channel configuration within the project area.

Conclusions

Based on our review of photographs taken of the area since 1910, our discussions with Mr. Glen Simmons of Puget Power, the results of our field investigations, and our understanding of the geology and geomorphology along the southern bank of the Snoqualmie River, it is our conclusion that the constriction in the river channel between stations U-8 and U-12 is a naturally occurring feature. Though a thin layer of fill was observed along the crest of the slope, we did not observe evidence to suggest that fill had been placed on the face of the slope at anytime in the past.

Closure

The conclusions presented in this letter report are based on the results of our field investigations and were prepared in accordance with generally accepted geotechnical engineering principles and practice in this area at the time this report was prepared. We make no other warranty, either express or implied.

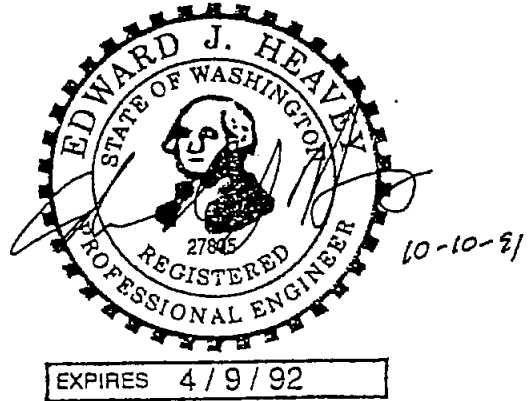
We trust this letter report supplies you with the necessary information. If you have any questions, please call.

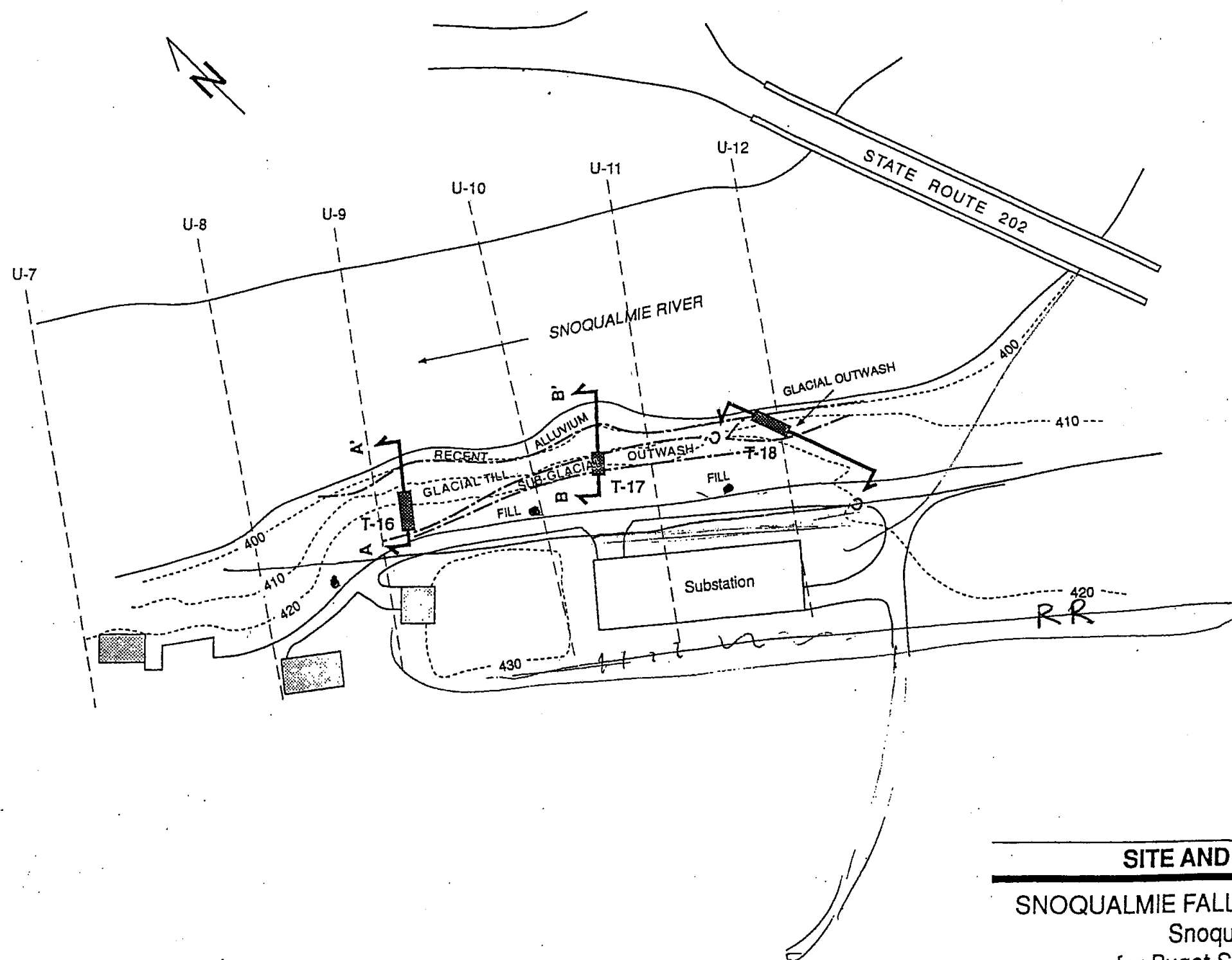
CONVERSE CONSULTANTS NW



Edward J. Heavey
Project Engineer

EJH/kpp





LEGEND

Approximate exploratory trench location

Approximate location of geological profile

Approximate geologic contact

Elevation contour line (Contour interval 10 feet)

Notes: Geologic contacts between units are approximate.
Colluvium not shown for clarity.

Scale

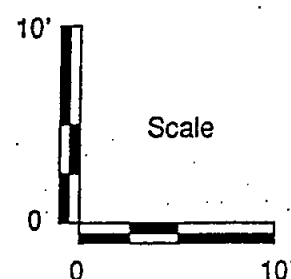
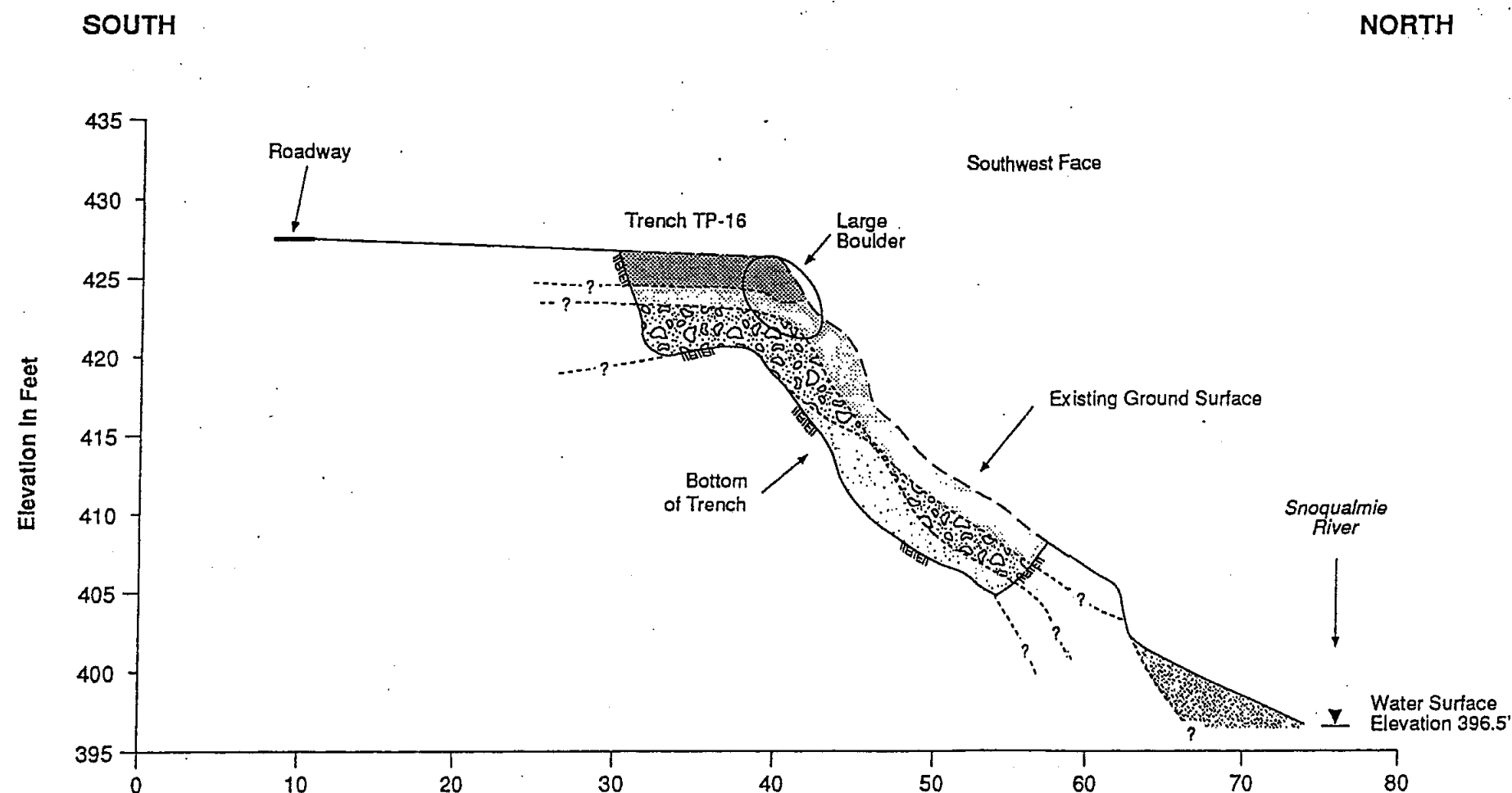
0 100'

Reference: Puget Sound Power & Light Company Application for new license, Snoqualmie Falls Hydroelectric Project, FERC Project No. 2493. *General Site Plan*, Exhibit F-2. By HDR Engineering, Undated.

SITE AND EXPLORATION PLAN

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
Snoqualmie, Washington
for Puget Sound Power & Light Co.

Project No.
91-3534
Figure No.



GEOLOGIC PROFILE A-A' (TEST PIT TP-16)

SNOQUALMIE FALLS HYDROELECTRIC PROJECT

Snoqualmie, Washington

for Puget Sound Power & Light Co.

Project No.

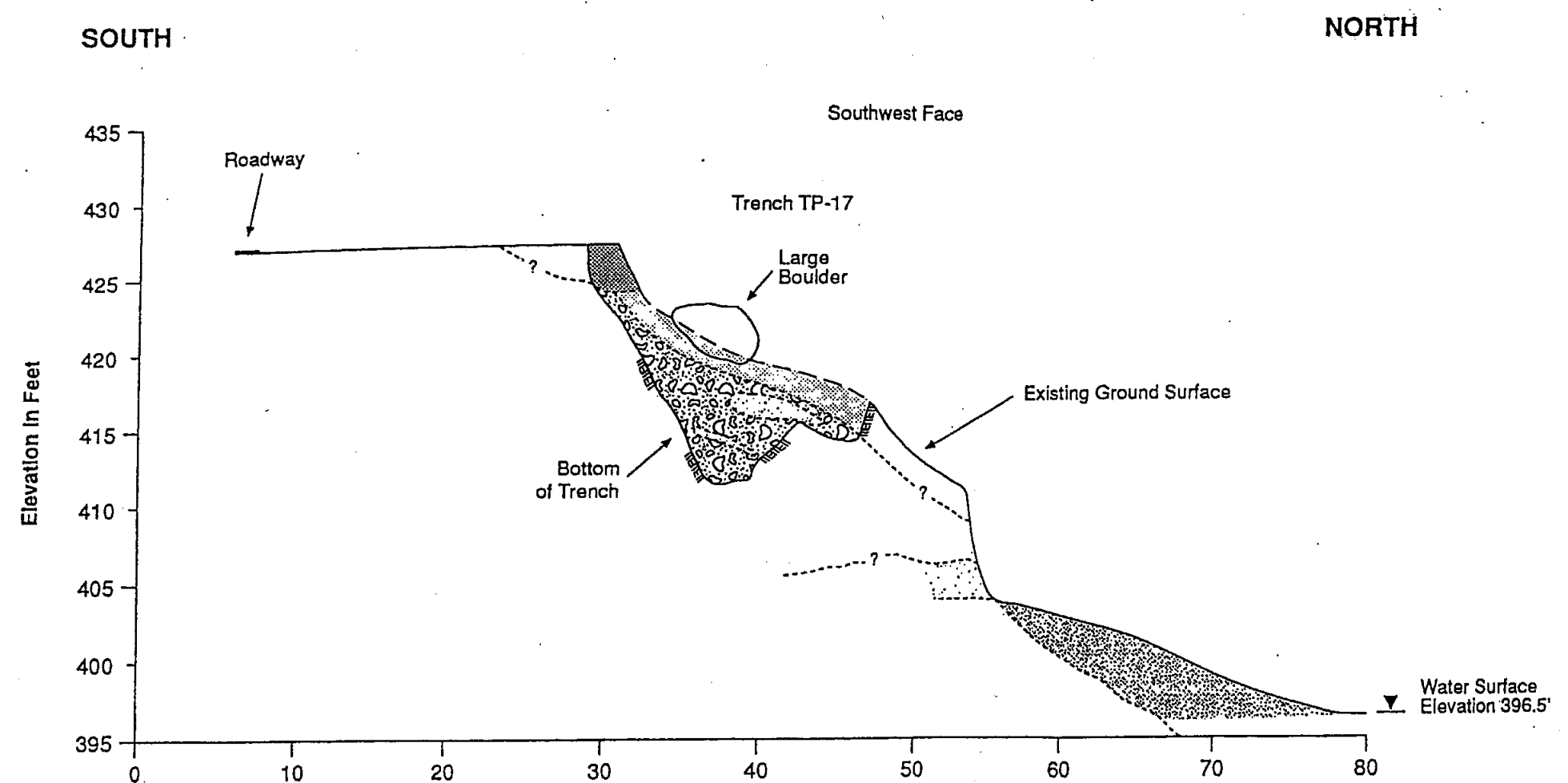
91-3534

Figure No.



Converse Consultants NW

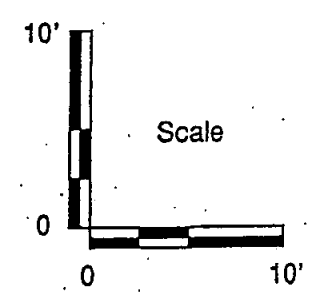
Geotechnical Engineering
and Applied Earth Sciences



LEGEND

- Fill**
Comprised of Silty Sand with Gravel with various Amounts of Cobbles from 4"-12" Diameter, Trace Wood Debris; Medium Dense
- Colluvium**
Silty Sand to Gravelly Sand with Various Amounts of Cobbles 4"-12" Diameter, Scattered Boulders up to 6" Diameter; Loose to Medium Dense
- Recent Alluvium**
Comprised of Sands, Gravel, Cobbles, and Boulders 5-8" Diameter; Loose
- Sub Glacial Outwash Deposits**
Primarily Matrix Supported Gravel and Cobbles, Scattered Boulders to 4' Diameter, Poorly Bedded at 16°-15° to Horizontal, Scattered Irregular Layers of Glacial Till; Very Dense
- Glacial Till**
Homogeneous Mixture of Silt, Sand Gravel and Scattered Cobbles; Very Dense

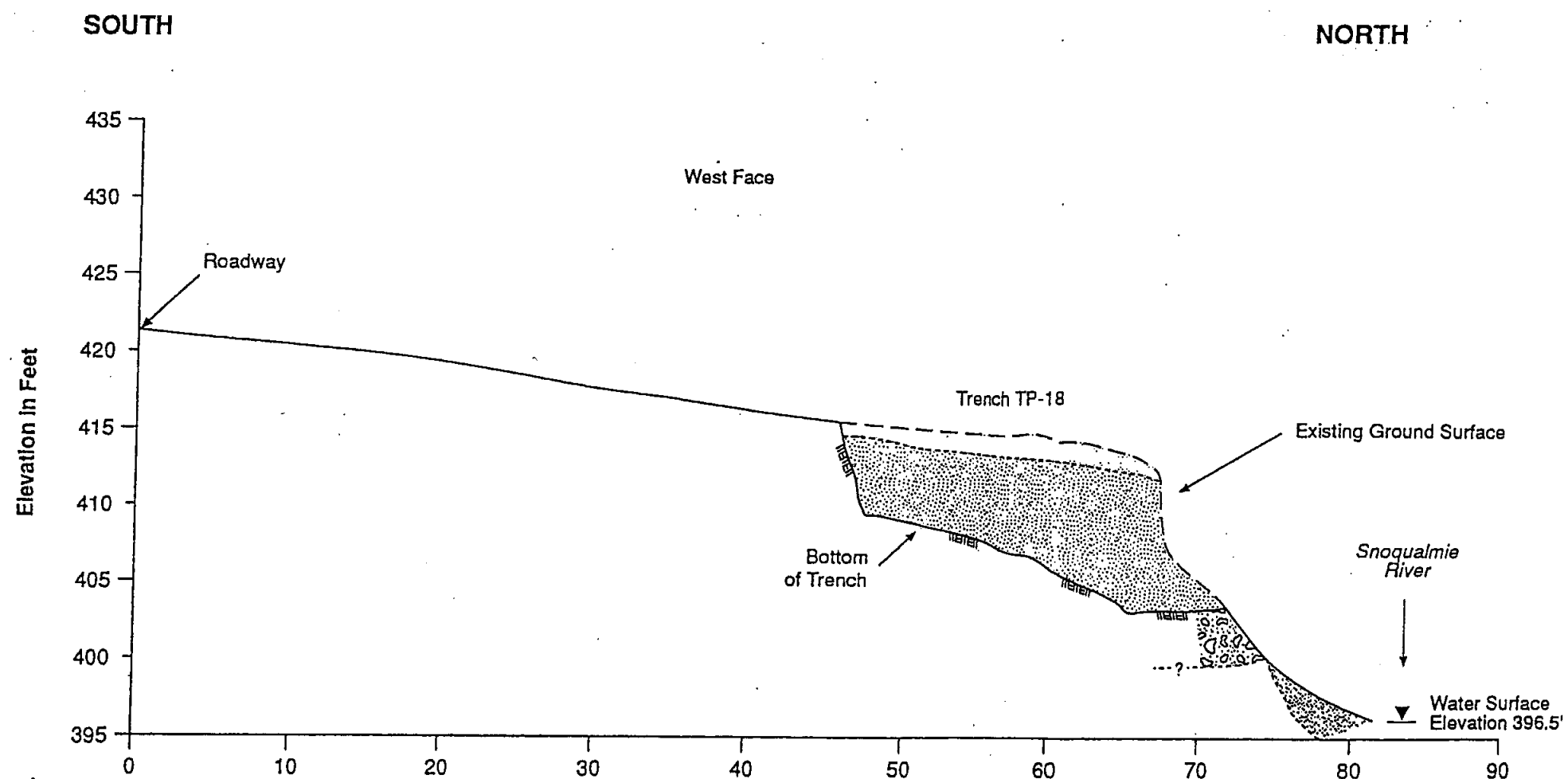
See figure 1 for location of profile.



GEOLOGIC PROFILE B-B' (TEST PIT TP-17)

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
Snoqualmie, Washington
for Puget Sound Power & Light Co.

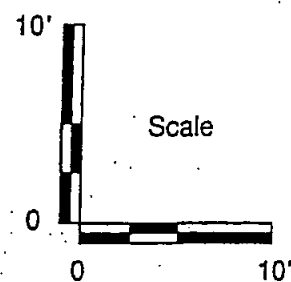
Project No. **91-353**
Figure No. **3**



LEGEND

- Colluvium**
Silty Sand to Gravelly Sand with Various Amounts of Cobbles 4"-12" Diameter, Scattered Boulders up to 6' Diameter; Loose to Medium Dense
- Recent Alluvium**
Comprised of Sands, Gravel, Cobbles, and Boulders 5-8' Diameter; Loose
- Glacial Outwash Deposits**
Primarily Sand, Brown, Fine to Medium grained, Various Amounts of Silt; Dense
- Sub Glacial Outwash Deposits**
Primarily Matrix Supported Gravel and Cobbles, Scattered Boulders to 4' Diameter, Poorly Bedded at 16"-15" to Horizontal, Scattered Irregular Layers of Glacial Till; Very Dense

See figure 1 for location of profile.



GEOLOGIC PROFILE C-C' (TEST PIT TP-18)

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
Snoqualmie, Washington
for Puget Sound Power & Light Co.

Project No.
91-353
Figure No.



Converse Consultants NW

Geotechnical Engineering
and Applied Earth Sciences

SECTION 02380

STONE PROTECTION FOR CHANNEL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM C 127	(1988; R 1993) Specific Gravity and Absorption of Coarse Aggregate ASTM C 136 1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 2487	(1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 3740	(1996) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D 4791	(1995) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D 4992	(1994) Evaluation of Rock to be Used for Erosion Control
ASTM D 5312	(1992) Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
ASTM D 5313	(1992; R 1997) Evaluation of Durability of Rock for Erosion Control Under Wetting and Drying Conditions
ASTM D 5519	(1994) Particle Size Analysis of Natural and Man-Made Riprap Materials
ASTM E 548	(1994) General Criteria Used for Evaluating Laboratory Competence
CORPS OF ENGINEERS (COE)	
COE CRD-C 144-92	(1992) Resistance of Rock to Freezing and Thawing
COE CRD-C 148	(1969) Testing Stone for Expansive Breakdown on Soaking in Ethylene Glycol

ENGINEERING MANUALS (EM)

EM 1110-2-1601 (1994) Hydraulic Design of Flood Control Channels

EM 1110-2-1906 (1986) Laboratory Soils Testing

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST HB 44 (1997) NIST Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Product Data

STONE PROTECTION

Derrick Stone; G, RE

Riprap; G, RE

Quarry Spalls; G, RE

Submit the source for materials used in derrick stone, riprap, and quarry spalls.

Bulk Specific Gravity of Stone and Redesign; G, RE

If the Contractor proposes to utilize stone having a specific gravity outside of the specific design range, and as a result thereof, the Government provides the Contractor with a redesign, then, within fifteen (15) calendar days after receipt of the Government's redesign, submit a formal proposal to perform the work in accordance with the redesign. The submittal shall include a statement of the direct savings to the Government and a tabulation in the form of a revised BIDDING SCHEDULE showing unchanged prices for the revised quantities.

Test Reports

Gradation Test; G, RE

Submit the gradation tests using the GRADATION TEST DATA SHEET enclosed at end of this section for riprap and stone.

Evaluation Testing of Stone; G, RE

Quality test on the stone in accordance with PART 2 paragraph EVALUATION TESTING OF STONE shall be the responsibility of the Contractor. Prior to delivery

of such material to the worksite, submit a copy of the laboratory inspection report along with actions taken to correct deficiencies. Submit a copy of the test reports.]

Bulk Specific Gravity; G, RE

At least 45 calendar days in advance of shipment of stone to the work site, submit a copy of bulk specific gravity test results for each gradation range of stone proposed to be furnished.

Certificates

Stone; G, RE
Bedding Material; G, RE
Filter Material; G, RE

Submit certificates of compliance attesting that the materials meet specification requirements.

Laboratory; G, RE

Submit a copy of the documents, provided by the Materials Testing Center (MTC) at CEWES or other governmental agency, that validates that the laboratory can perform the required tests. The individual tests shall be listed for which the validation covers along with the date of the inspection.

PART 2 PRODUCTS

2.1 MATERIAL SOURCE

The Contractor shall select materials which meet the quality requirements listed below from an existing commercial source. The Contractor shall verify the availability of an adequate and acceptable materials source based on quantity, quality, and gradation.

2.2 Stone

2.2.1 General: All rock shall be sound, clean, angular, and durable stone as approved by the Contracting Officer. The longest dimension of any stone shall not exceed three times its shortest dimension. Acceptability of stones will be determined by laboratory tests, as hereinafter specified, geologic examination, and service records. Stone shall be free of expansive or other materials that could cause accelerated deterioration by exposure to project climatic conditions. Stone shall be free of cracks, blast fractures, bedding, seams, and other defects that would tend to increase its deterioration from natural causes. Inspections for cracks, fractures, seams, bands of minerals, deleterious materials, and defects shall be made by visual examination. Stone shall be free of bands of minerals and deleterious materials that would result in breakage or reduction of specified stone weights or dimensions during or after placement. Each stone shall have sufficiently uniform physical properties throughout so that all portions of the stone will meet the specified test requirements.

2.2.2 Evaluation Testing: Immediately after award of the contract, and within 5 days of receipt of notice to proceed, the Contractor shall submit to the Contracting Officer all

pertinent test results and service records from the proposed material source. These test results shall be recent (less than 12 months old) and include, but not limited to, specific gravity, absorption, accelerated expansion, freezing and thawing, and petrographic analysis. The tests shall be performed in accordance with, and meet the requirements of the procedures outlined below. In the event existing satisfactory laboratory test results are not available, the material shall be subjected to the tests outlined in these specifications to determine the acceptability for use in the project. The Contractor shall have the option to test representative quarry samples at the Materials Testing Center (MTC) at the U.S. Army Waterways Experiment Station in Vicksburg, MS or at one or more Corps of Engineers validated commercial laboratories that have been designated to perform the required test(s). Throughout the duration of this contract, the Government may sample and test rock delivered to the worksite and proposed for use under construction. No contract extension will be granted for specified submittal and testing time or because materials fail to meet the specification requirements. Rock failing to meet the specified requirements will be removed from the worksite at no additional cost to the Government.

2.2.3 Rock Quality: All derrick stone, riprap, and quarry spalls delivered to and incorporated in the work shall meet the following minimum specifications:

<u>Test</u>	<u>Requirement</u>
Specific Gravity (BSSD) (ASTM Designation C-127)	2.60 min.
Absorption (ASTM C-127)	3% max.
Accelerated Expansion (CRD C-148)	5% breakdown max.
Freezing and Thawing, 100 cycles (ASTM D 5312)	10% loss max.

2.2.4 Accelerated Expansion (15 days): The test samples shall be tested in accordance with Corps of Engineers Testing Procedure CRD C-148, except as herein specified. Testing procedure for sample size in CRD C-148 shall be modified as follows: The test sample shall be from 10 lbs. to 11 lbs. of 2-inch to 1.5-inch sized pieces. Test results will be computed by dividing the number of pieces that break down by the number of pieces in the original test sample. Failure or breakdown is defined as any piece separating into two or more pieces or losing sufficient surface material to allow it to pass through the 1.5 inch sieve. Maximum allowable breakdown is 15% over a period of 15 days. Weight loss based on the original oven dry weight shall be recorded.

2.2.5 Freezing and Thawing: The test samples, consisting of 10 pounds of pieces passing the 2-inch sieve and retained on the 1.5-inch sieve, shall be prepared by jaw crushing or hand chipping with all sharp edges chipped off and only pieces of approximately cubical shape used. Original dry weight of pieces selected for the freeze-thaw test will be computed by determining moisture content of room-dry rock from representative surplus or undersized pieces. Dry weight of pieces for freeze-thaw equals:

$$\frac{\text{Weight (room-dry)}}{100} \times 100$$

Specimens shall be immersed in water for 24 hours prior to start of test. Sample is placed in a pan approximately 15 by 9.5 by 1.25 inches and the pan is subjected to freezing and thawing in freeze-thaw apparatus described in ASTM D-5312 (CRD C-114) at the rate of 12 cycles per day, one cycle consisting of approximately 1 hour in alcohol solution at 0 degrees, +/- 2 degrees, F and 1 hour in alcohol solution at 40 degrees, +/- 2 degrees, F. The pan shall be suspended to a depth of 0.5 to 1 inch in the alcohol solution. The sample shall be tested for 100 cycles. At the end of 100 cycles, the sample shall be washed, dried, sieved over the 1.5 inch sieve, and weighed. The percent loss shall be computed based on the original dry weight.

2.3 Rock Gradation:

2.3.1 Derrick stone shall be graded as follows:

100 % smaller than 54 inch diameter

30 % larger than 2.19 foot diameter

90 % larger than 3.17 foot diameter

D100 stone shall range between 7873 pounds (#) and 3149 #

D50 stone shall range between 2330 # and 1575 #

D15 stone shall range between 1165 # and 492 #

2.3.2 Riprap (Class V) shall be graded as follows:

100 % smaller than 1800 pounds

50 % size equal to or greater than 750 pounds

90 % larger than 350 pounds

10 % between 25 and 350 pounds

2.3.3 Quarry spall for Stabilized Construction Entrance shall be well graded between a minimum of 1 inch and a maximum size of 8 inches with 50 % by weight greater than 4 inches.

2.3.4 Quarry spalls for Derrick Stone Filter shall be well graded between a minimum of 1/4 inch and a maximum of 6 inches.

2.4 Acceptance of Materials: Materials will be inspected at the jobsite prior to placement. The Contractor shall be responsible for maintaining gradations as specified. Materials that do not meet gradation or quality as specified will be rejected and no payment will be made regardless of any general or provisional acceptance of materials from a stockpile or pit source. Additional tests shall be conducted if furnished materials do not meet gradation requirements. Results of tests shall be furnished to the Contracting Officer within 24 hours following selection of a sample. All costs of such tests shall be borne by the Contractor and shall be incidental to placing materials.

PART 3 EXECUTION

3.1 Placement of Stone. Derrick stone and Riprap shall be placed mechanically and compacted to a smooth surface either by mechanical tamper or hydraulic tamper attached to excavator arm. No Derrick stone or Riprap will be placed by end dumping and any stone that inadvertently winds up in the river channel shall be retrieved and re-placed on the revetment slope.

END OF SECTION

SECTION 02630

STORM-DRAINAGE SYSTEM

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO HB-16 (1996) Standard Specifications for Highway Bridges

AASHTO M167 (2000) Standard Specification for Corrugated Steel
Structural Plate, Zinc-Coated, for Field-Bolted Pipe,
Pipe-Arches, and Arches

AASHTO M 190 (1995) Bituminous Coated Corrugated Metal Culvert
Pipe and Pipe Arches

AASHTO M 198 (1998) Joints for Circular Concrete Sewer and Culvert
Pipe, Using Flexible Watertight Gaskets

AASHTO M 219 (1992; R 2000) Aluminum Alloy Structural Plate for Field
Bolted Conduits

AASHTO M 243 (1996) Field Applied Coating of Corrugated Metal
Structural Plate for Pipe, Pipe-Arches, and Arches

AASHTO M 294 (1998) Corrugated Polyethylene Pipe, 12 inches to 48
inches Diameter

AASHTO MP7 (1997) Corrugated Polyethylene Pipe, 54 and 60 inches
Diameter

AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA)

AREMA Manual (1999) Manual for Railway Engineering (4 Vol.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 48/A 48M (2000) Gray Iron Castings

ASTM A123/A123M	(2000) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A536	((1984)(1999) e1) Standard Specification for Ductile Iron Castings
ASTM A 742/A 742M	(1998) Steel Sheet, Metallic Coated and Polymer Precoated for Corrugated Steel Pipe
ASTM A 760/A 760M	(1997) Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM A 762/A 762M	(1998) Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM A 798/A 798M	(1997a) Installing Factory-Made Corrugated Steel Pipe for Sewers and Other Applications
ASTM A 807	(1997) Installing Corrugated Steel Structural Plate Pipe for Sewers and Other Applications
ASTM A 849	(1997) Post-Applied Coatings, Pavings, and Linings for Corrugated Steel Sewer and Drainage Pipe
ASTM A 929/A 929M	(1997) Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
ASTM B26/B26M	(1999) Standard Specification for Aluminum-Alloy Sand Castings
ASTM B745/B745M	(1997) Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
ASTM C231	(1997e1) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C270	(2000) Standard Specification for Mortar for Unit Masonry
ASTM C425	(2000) Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings
ASTM C443	(1998) Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
ASTM C 478M	(1997) Precast Reinforced Concrete Manhole Sections

ASTM C789	(2000) Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers
ASTM C850	(2000) Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers with Less Than 2 ft of Cover Subjected to Highway Loadings
ASTM C877	(2000) Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections
ASTM C 923	(1998) Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Materials
ASTM D1056	(2000) Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber
ASTM D1171	(1999) Standard Test Method for Rubber Deterioration-Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens)
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft.)
ASTM D 1751	(1999) Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
ASTM D 1752	((1984)(1996) e1) Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2321	(2000) Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D 2922	(1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1996el) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

ASTM D 3212	(1996a) Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D 3350	(1998a) Polyethylene Plastics Pipe and Fittings Materials
ASTM F 477	(1999) Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 714	(1997) Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
ASTM F 1417	(1992; R 1998) Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air

1.2 NOT USED

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Placing Pipe;

Printed copies of the manufacturer's recommendations for installation procedures of the material being placed, prior to installation.

SD-07 Certificates

Resin Certification;
Pipeline Testing
Hydrostatic Test on Watertight Joints;
Determination of Density;
Frame and Cover for Gratings;

Certified copies of test reports demonstrating conformance to applicable pipe specifications, before pipe is installed. Certification on the ability of frame and cover or gratings to carry the imposed live load.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. Materials shall not be stored directly on the ground. The inside of pipes and fittings shall be kept free of dirt and debris. Before, during, and after installation, plastic pipe and fittings shall be protected from any environment that would result in damage

or deterioration to the material. The Contractor shall have a copy of the manufacturer's instructions available at the construction site at all times and shall follow these instructions unless directed otherwise by the Contracting Officer. Solvents, solvent compounds, lubricants, elastomeric gaskets, and any similar materials required to install plastic pipe shall be stored in accordance with the manufacturer's recommendations and shall be discarded if the storage period exceeds the recommended shelf life. Solvents in use shall be discarded when the recommended pot life is exceeded.

1.4.2 Handling

Materials shall be handled in a manner that ensures delivery to the trench in sound, undamaged condition. Pipe shall be carried to the trench, not dragged.

PART 2 PRODUCTS

2.1 PIPE FOR CULVERTS AND STORM DRAINS

Pipe for culverts and storm drains shall be of the sizes indicated and shall conform to the requirements specified.

2.1.1 PE Pipe

The pipe manufacturer's resin certification indicating the cell classification of PE used to manufacture the pipe shall be submitted prior to installation of the pipe. The minimum cell classification for polyethylene plastic shall apply to each of the seven primary properties of the cell classification limits in accordance with ASTM D 3350.

2.1.1.1 Corrugated PE Pipe

AASHTO M 294, Type S or D, for pipes 12 to 48 inches and AASHTO MP7, Type S or D, for pipes to 60 inches produced from PE certified by the resin producer as meeting the requirements of ASTM D 3350, minimum cell class in accordance with AASHTO M 294. Pipe walls shall have the following properties:

Nominal Size (in.)	Minimum Wall Area (square in/ft)	Minimum Moment of Inertia of Wall Section (in to the 4th/in)
12	1.50	0.024
15	1.91	0.053
18	2.34	0.062
24	3.14	0.116
30	3.92	0.163
36	4.50	0.222
42	4.69	0.543
48	5.15	0.543
54	5.67	0.800
60	6.45	0.800

2.1.2 Corrugated Steel Pipe

ASTM A 760/A 760M, zinc or aluminum (Type 2) coated pipe of either:

- a. Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.
- b. Type IR pipe with helical 3/4 by 3/4 by 7-1/2 inch corrugations.

2.1.2.1 Fully Bituminous Coated

AASHTO M 190 Type A and ASTM A 760/A 760M zinc or aluminum (Type 2) coated pipe of either:

- a. Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.
- b. Type IR pipe with helical 3/4 by 3/4 by 7-1/2 inch corrugations.

2.1.2.2 Half Bituminous Coated, Part Paved

AASHTO M 190 Type B and ASTM A 760/A 760M zinc or aluminum (Type 2) coated Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.

2.1.2.3 Fully Bituminous Coated, Part Paved

AASHTO M 190 Type C and ASTM A 760/A 760M zinc or aluminum (Type 2) coated Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.

2.1.2.4 Fully Bituminous Coated, Fully Paved

AASHTO M 190 Type D and ASTM A 760/A 760M zinc or aluminum (Type 2) coated Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.

2.1.2.5 Concrete-Lined

ASTM A 760/A 760M zinc coated Type I corrugated steel pipe with annular or helical 2-2/3 by 1/2 inch corrugations and a concrete lining in accordance with ASTM A 849.

2.1.2.6 Polymer Precoated

ASTM A 762/A 762M corrugated steel pipe fabricated from ASTM A 742/A 742M Grade 10/10 polymer precoated sheet of either:

- a. Type I pipe with annular or helical 2-2/3 by 1/2 inch corrugations.
- b. Type IR pipe with helical 3/4 by 3/4 by 7-1/2 inch corrugations.

2.1.2.7 Polymer Precoated, Part Paved

ASTM A 762/A 762M Type I corrugated steel pipe and AASHTO M 190 Type B (modified), paved invert only, fabricated from ASTM A 742/A 742M Grade 10/10 polymer precoated sheet with annular or helical 2-2/3 by 1/2 inch corrugations.

2.1.2.8 Polymer Precoated, Fully Paved

ASTM A 762/A 762M Type I corrugated steel pipe and AASHTO M 190 Type D (modified), fully paved only, fabricated from ASTM A 742/A 742M Grade 10/10 polymer precoated sheet with annular or helical 2-2/3 by 1/2 inch corrugations.

2.1.3 Corrugated Aluminum Alloy Pipe

ASTM B 745/B 745M corrugated aluminum alloy pipe of either:

- a. Type I pipe with annular or helical corrugations.
- b. Type IA or IR pipe with helical corrugations.

2.1.3.1 Aluminum Fully Bituminous Coated

AASHTO M 190 Type A and ASTM B 745/B 745M corrugated aluminum alloy pipe of either:

- a. Type I pipe with annular or helical corrugations.
- b. Type IA or IR pipe with helical corrugations.

2.1.3.2 Aluminum Fully Bituminous Coated, Part Paved

AASHTO M 190 Type C and ASTM B 745/B 745M corrugated aluminum alloy pipe of either:

- a. Type I pipe with annular or helical corrugations.
- b. Type IR pipe with helical corrugations.

2.1.4 Structural Plate, Steel Pipe, Pipe Arches and Arches

Assembled with galvanized steel nuts and bolts, from galvanized corrugated steel plates conforming to AASHTO M 167. Pipe coating, when required, shall conform to the requirements of AASHTO M 190 Type A. Thickness of plates shall be as indicated.

2.1.5 Structural Plate, Aluminum Pipe, Pipe Arches and Arches

Assembled with either aluminum alloy, aluminum coated steel, stainless steel or zinc coated steel nuts and bolts. Nuts and bolts, and aluminum alloy plates shall conform to AASHTO M 219. Pipe coating, when required, shall conform to the requirements of AASHTO M 190, Type A. Thickness of plates shall be as indicated.

2.2 DRAINAGE STRUCTURES

2.2.1 Flared End Sections

Sections shall be of a standard design fabricated from zinc coated steel sheets meeting requirements of ASTM A 929/A 929M.

2.2.2 Precast Reinforced Concrete Box

For highway loadings with 2 feet of cover or more or subjected to dead load only, ASTM C 789; for less than 2 feet of cover subjected to highway loading, ASTM C 850.

2.3 MISCELLANEOUS MATERIALS

2.3.1 Concrete

Unless otherwise specified, concrete and reinforced concrete shall conform to the requirements for 2900 psi concrete under Section 03307 CONCRETE FOR MINOR STRUCTURES. The concrete mixture shall have air content by volume of concrete, based on measurements made immediately after discharge from the mixer, of 5 to 7 percent when maximum size of coarse aggregate exceeds 1-½ inches. Air content shall be determined in accordance with ASTM C 231. The concrete covering over steel reinforcing shall not be less than 25 mm thick for covers and not less than 40 mm thick for walls and flooring. Concrete covering deposited directly against the ground shall have a thickness of at least 3 inches between steel and ground. Expansion-joint filler material shall conform to ASTM D 1751, or ASTM D 1752, or shall be resin-impregnated fiberboard conforming to the physical requirements of ASTM D 1752.

2.3.2 Mortar

Mortar for pipe joints, connections to other drainage structures, and brick or block construction shall conform to ASTM C 270, Type M, except that the maximum placement time shall be 1 hour. The quantity of water in the mixture shall be sufficient to produce a stiff workable mortar but in no case shall exceed 25 liters of water per sack of cement. Water shall be clean and free of harmful acids, alkalis, and organic impurities. The mortar shall be used within 30 minutes after the ingredients are mixed with water. The inside of the joint shall be wiped clean and finished smooth. The mortar head on the outside shall be protected from air and sun with a proper covering until satisfactorily cured.

2.3.3 Domed Grates

Domed grates shall be ductile iron and shall conform to ASTM A536, Grade 70-50-05.

2.3.4 Frame and Cover for Gratings

Frame and cover for gratings shall be cast gray iron, ASTM A 48/A 48M, Class 35B; cast ductile iron, ASTM A 536, Grade 65-45-12; or cast aluminum, ASTM B 26/B 26M, Alloy 356.OT6. Weight, shape, size, and waterway openings for grates and curb inlets shall be as indicated on the plans.

2.3.5 Precast Reinforced Concrete Manholes and Catch Basins

Precast reinforced concrete manholes shall conform to ASTM C 478M ASTM C 478. Joints between precast concrete risers and tops shall be made with flexible watertight, rubber-type gaskets meeting the requirements of paragraph JOINTS.

2.3.6 Prefabricated Corrugated Metal Manholes

Manholes shall be of the type and design recommended by the manufacturer. Manholes shall be complete with frames and cover, or frames and gratings.

2.3.7 Joints

2.3.7.1 Flexible Watertight Joints

- a. Materials: Flexible watertight joints shall be made with plastic or rubber-type gaskets for concrete pipe and with factory-fabricated resilient materials for clay pipe. The design of joints and the physical requirements for plastic gaskets shall conform to AASHTO M 198, and rubber-type gaskets shall conform to ASTM C 443M ASTM C 443. Factory-fabricated resilient joint materials shall conform to ASTM C 425. Gaskets shall have not more than one factory-fabricated splice, except that two factory-fabricated splices of the rubber-type gasket are permitted if the nominal diameter of the pipe being gasketed exceeds 54 inches.
- b. Test Requirements: Watertight joints shall be tested and shall meet test requirements of paragraph HYDROSTATIC TEST ON WATERTIGHT JOINTS. Rubber gaskets shall comply with the oil resistant gasket requirements of ASTM C 443M. Certified copies of test results shall be delivered to the Contracting Officer before gaskets or jointing materials are installed. Alternate types of watertight joint may be furnished, if specifically approved.

2.3.7.2 External Sealing Bands

Requirements for external sealing bands shall conform to ASTM C 877M ASTM C 877.

2.3.7.3 Flexible Watertight, Gasketed Joints

- a. Gaskets: When infiltration or exfiltration is a concern for pipelines, the couplings may be required to have gaskets. The closed-cell expanded rubber gaskets shall be a continuous band approximately 7 inches wide and approximately 3/8 inch thick, meeting the requirements of ASTM D 1056, Type 2 B3, and shall have a quality retention rating of not less than 70 percent when tested for weather resistance by ozone chamber exposure, Method B of ASTM D 1171. Rubber O-ring gaskets shall be 13/16 inch in diameter for pipe diameters of 36 inches or smaller and 7/8 inch in diameter for larger pipe having 1/2 inch deep end corrugation. Rubber O-ring gaskets shall be 1-3/8 inches in diameter for pipe having 1 inch deep end corrugations. O-rings shall meet the requirements of AASHTO M 198 or ASTM C 443. Flexible plastic gaskets shall conform to requirements of AASHTO M 198, Type B.
- b. Connecting Bands: Connecting bands shall be of the type, size and sheet thickness of band, and the size of angles, bolts, rods and lugs as indicated or where not indicated as specified in the applicable standards or specifications for the pipe. Exterior rivet heads in the longitudinal seam under the connecting band shall be countersunk or the rivets shall be omitted and the seam welded. Watertight joints shall be tested and shall meet the test requirements of paragraph HYDROSTATIC TEST ON WATERTIGHT JOINTS.

2.3.7.4 Corrugated PE Plastic Pipe

Watertight joints shall be made using a PVC or PE coupling and rubber gaskets as recommended by the pipe manufacturer. Rubber gaskets shall conform to ASTM F 477. Soil tight joints shall conform to the requirements in AASHTO HB-16, Division II, Section 26.4.2.4. (e) for soil tightness and shall be as recommended by the pipe manufacturer.

2.4 STEEL LADDER

Steel ladder shall be provided where the depth of the manhole exceeds 12 feet. These ladders shall be not less than 16 inches in width, with 3/4 inch diameter rungs spaced 12 inches apart. The two stringers shall be a minimum 3/8 inch thick and 2-1/2 inches wide. Ladders and inserts shall be galvanized after fabrication in conformance with ASTM A 123/A 123M.

2.5 DOWNSPOUT BOOTS

Boots used to connect exterior downspouts to the storm-drainage system shall be of gray cast iron conforming to ASTM A 48M, Class 30B or 35B. Shape and size shall be as indicated.

2.6 RESILIENT CONNECTORS

Flexible, watertight connectors used for connecting pipe to manholes and inlets shall conform to ASTM C 923.

2.7 HYDROSTATIC TEST ON WATERTIGHT JOINTS

2.7.1 PE Pipe

A hydrostatic test shall be made on the watertight joint types as proposed. Only one sample joint of each type needs testing; however, if the sample joint fails because of faulty design or workmanship, an additional sample joint may be tested. During the test period, gaskets or other jointing material shall be protected from extreme temperatures which might adversely affect the performance of such materials. Test requirements for joints in PE plastic pipe shall conform to ASTM D 3212.

2.7.2 Corrugated Steel and Aluminum Pipe

A hydrostatic test shall be made on the watertight joint system or coupling band type proposed. The moment strength required of the joint is expressed as 15 percent of the calculated moment capacity of the pipe on a transverse section remote from the joint by the AASHTO HB-16 (Division II, Section 26). The pipe shall be supported for the hydrostatic test with the joint located at the point which develops 15 percent of the moment capacity of the pipe based on the allowable span in feet for the pipe flowing full or 40,000 foot-pounds, whichever is less. Performance requirements shall be met at an internal hydrostatic pressure of 10 psi for a 10 minute period for both annular corrugated metal pipe and helical corrugated metal pipe with factory reformed ends.

PART 3 EXECUTION

3.1 EXCAVATION FOR PIPE CULVERTS, STORM DRAINS, AND DRAINAGE STRUCTURES

3.1.1 Excavation

Excavation of trenches, and for appurtenances and backfilling for culverts and storm drains, shall be in accordance with the requirements specified below. Excavation shall be performed to the lines and grades indicated. Earth excavation shall include removal and disposal of material not classified as rock excavation. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench equal to 1/2 the depth of the excavation, but in no instance closer than 2 feet. Excavated material not required or not satisfactory for backfill shall be removed from the site or shall be disposed of as directed by the Contracting Officer. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating shall be removed to maintain the stability of the bottom and sides of the excavation.

3.1.2 Trenching

The width of trenches at any point below the top of the pipe shall be not greater than the outside diameter of the pipe plus 24 inches to permit satisfactory jointing and thorough tamping of the bedding material under and around the pipe. Sheet piling and bracing, where required, shall be placed within the trench width as specified. Contractor shall not over excavate. Where trench widths are exceeded, redesign with a resultant increase in cost of stronger pipe or special installation procedures will be necessary. Cost of this redesign and increased cost of pipe or installation shall be borne by the Contractor without additional cost to the Government.

3.1.3 Removal of Unstable Material

Where wet or otherwise unstable soil incapable of properly supporting the pipe, as determined by the Contracting Officer, is unexpectedly encountered in the bottom of a trench, such material shall be removed to the depth required and replaced to the proper grade with select granular material, compacted as provided in paragraph BACKFILLING. When removal of unstable material is due to the fault or neglect of the Contractor in his performance of shoring and sheet piling, water removal, or other specified requirements, such removal and replacement shall be performed at no additional cost to the government.

3.1.4 Excavation for Appurtenances

Excavation for manholes, catch basins, inlets, or similar structures shall be of sufficient size to permit the placement and removal of forms for the full length and width of structure footings and foundations as shown. Rock shall be cleaned of loose debris and cut to a firm surface either level, stepped, or serrated, as shown or as directed. Loose disintegrated rock and thin strata shall be removed. Removal of unstable material shall be as specified above. When concrete or masonry is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation. Excavation to the final grade level shall not be made until just before the concrete or masonry is to be placed.

3.1.5 Jacking, Boring, and Tunneling

Unless otherwise indicated, excavation shall be by open cut except that sections of a trench may be jacked, bored, or tunneled if, in the opinion of the Contracting Officer, the pipe, cable, or duct can be safely and properly installed and backfill can be properly compacted in such sections.

3.1.6 Stockpiles

Stockpiles of satisfactory and unsatisfactory shall be placed and graded as specified. Stockpiles shall be kept in a neat and well-drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment, excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government. Locations of stockpiles of satisfactory materials shall be subject to prior approval of the Contracting Officer.

3.2 BEDDING

The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe.

3.2.1 Plastic Pipe

Bedding for PE pipe shall meet the requirements of ASTM D 2321. Bedding, haunching, and initial backfill shall be either Class IB or II material.

3.2.2 Corrugated Metal Pipe

Bedding for corrugated metal pipe and pipe arch shall be in accordance with A 798/A 798M. It is not required to shape the bedding to the pipe geometry. However, for pipe arches, the Contractor shall either shape the bedding to the relatively flat bottom arc or fine grade the foundation to a shallow v-shape. Bedding for corrugated structural plate pipe shall meet requirements of ASTM A 807.

3.3 PLACING PIPE

Each pipe shall be thoroughly examined before being laid; defective or damaged pipe shall not be used. Plastic pipe shall be protected from exposure to direct sunlight prior to laying, if necessary to maintain adequate pipe stiffness and meet installation deflection requirements. Pipelines shall be laid to the grades and alignment indicated. Proper facilities shall be provided for lowering sections of pipe into trenches. Lifting lugs in vertically elongated metal pipe shall be placed in the same vertical plane as the major axis of the pipe. Pipe shall not be laid in water, and pipe shall not be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. Deflection of installed flexible pipe shall not exceed the following limits:

TYPE OF PIPE	MAXIMUM ALLOWABLE DEFLECTION (%)
Corrugated Steel and Aluminum Alloy	5
Concrete-Lined Corrugated Steel	3
Plastic	7.5

Not less than 30 days after the completion of backfilling, the Government may perform a deflection test on the entire length of installed flexible pipe using a mandrel or other suitable device. Installed flexible pipe showing deflections greater than those indicated above shall be retested by a run from the opposite direction. If the retest also fails, the suspect pipe shall be replaced at no cost to the Government.

3.3.1 Corrugated PE Pipe

Laying shall be with the separate sections joined firmly on a bed shaped to line and grade and shall follow manufacturer's recommendations.

3.3.2 Corrugated Metal Pipe

Laying shall be with the separate sections joined firmly together, with the outside laps of circumferential joints pointing upstream, and with longitudinal laps on the sides. Part paved pipe shall be installed so that the centerline of bituminous pavement in the pipe, indicated by suitable markings on the top at each end of the pipe sections, coincides with the specified alignment of pipe. Fully paved steel pipe or pipe arch shall have a painted or otherwise applied label inside the pipe or pipe arch indicating sheet thickness of pipe or pipe arch. Any unprotected metal in the joints shall be coated with bituminous material as specified in AASHTO M 190 or AASHTO M 243. Interior coating shall be protected against damage from insertion or removal of struts or tie wires. Lifting lugs shall be used to facilitate moving pipe without damage to exterior or interior coatings. During transportation and installation, pipe or pipe arch and coupling bands shall be handled with care to preclude damage to the coating, paving or lining. Damaged coatings, pavings and linings shall be repaired in accordance with the manufacturer's recommendations prior to placing backfill. Pipe on which coating, paving or lining has been damaged to such an extent that satisfactory field repairs cannot be made shall be removed and replaced. Vertical elongation, where indicated, shall be accomplished by factory elongation. Suitable markings or properly placed lifting lugs shall be provided to ensure placement of factory elongated pipe in a vertical plane.

3.3.3 Multiple Culverts

Where multiple lines of pipe are installed, adjacent sides of pipe shall be at least half the nominal pipe diameter or 3 feet apart, whichever is less.

3.4 JOINTING

3.4.1 Corrugated Metal Pipe

3.4.1.1 Field Joints

Transverse field joints shall be designed so that the successive connection of pipe sections will form a continuous line free of appreciable irregularities in the flow line. In addition, the

joints shall meet the general performance requirements described in ASTM A 798/A 798M. Suitable transverse field joints which satisfy the requirements for one or more of the joint performance categories can be obtained with the following types of connecting bands furnished with suitable band-end fastening devices: corrugated bands, bands with projections, flat bands, and bands of special design that engage factory reformed ends of corrugated pipe. The space between the pipe and connecting bands shall be kept free from dirt and grit so that corrugations fit snugly. The connecting band, while being tightened, shall be tapped with a soft-head mallet of wood, rubber or plastic, to take up slack and ensure a tight joint. The annular space between abutting sections of part paved, and fully paved pipe and pipe arch, in sizes 750 mm (30 inches) 30 inches or larger, shall be filled with a bituminous material after jointing. Field joints for each type of corrugated metal pipe shall maintain pipe alignment during construction and prevent infiltration of fill material during the life of the installations. The type, size, and sheet thickness of the band and the size of angles or lugs and bolts shall be as indicated or where not indicated, shall be as specified in the applicable standards or specifications for the pipe.

3.4.1.2 Flexible Watertight, Gasketed Joints

Installation shall be as recommended by the gasket manufacturer for use of lubricants and cements and other special installation requirements. The gasket shall be placed over one end of a section of pipe for half the width of the gasket. The other half shall be doubled over the end of the same pipe. When the adjoining section of pipe is in place, the doubled-over half of the gasket shall then be rolled over the adjoining section. Any unevenness in overlap shall be corrected so that the gasket covers the end of pipe sections equally. Connecting bands shall be centered over adjoining sections of pipe, and rods or bolts placed in position and nuts tightened. Band Tightening: The band shall be tightened evenly, even tension being kept on the rods or bolts, and the gasket; the gasket shall seat properly in the corrugations. Watertight joints shall remain uncovered for a period of time designated, and before being covered, tightness of the nuts shall be measured with a torque wrench. If the nut has tended to loosen its grip on the bolts or rods, the nut shall be retightened with a torque wrench and remain uncovered until a tight, permanent joint is assured.

3.5 DRAINAGE STRUCTURES

3.5.1 Manholes and Inlets

Construction shall be of reinforced concrete, plain concrete, brick, precast reinforced concrete, precast concrete segmental blocks, prefabricated corrugated metal, or bituminous coated corrugated metal; complete with frames and covers or gratings; and with fixed galvanized steel ladders where indicated. Pipe studs and junction chambers of prefabricated corrugated metal manholes shall be fully bituminous-coated and paved when the connecting branch lines are so treated. Pipe connections to concrete manholes and inlets shall be made with flexible, watertight connectors.

3.5.2 Walls and Headwalls

Construction shall be as indicated.

3.6 STEEL LADDER INSTALLATION

Ladder shall be adequately anchored to the wall by means of steel inserts spaced not more than 6 feet vertically, and shall be installed to provide at least 6 inches of space between the wall and the rungs. The wall along the line of the ladder shall be vertical for its entire length.

3.7 BACKFILLING

3.7.1 Backfilling Pipe in Trenches

After the pipe has been properly bedded, selected material from excavation or borrow, at a moisture content that will facilitate compaction, shall be placed along both sides of pipe in layers not exceeding 6 inches in compacted depth. The backfill shall be brought up evenly on both sides of pipe for the full length of pipe. The fill shall be thoroughly compacted under the haunches of the pipe. Each layer shall be thoroughly compacted with mechanical tampers or rammers. This method of filling and compacting shall continue until the fill has reached an elevation of at least 12 inches above the top of the pipe. The remainder of the trench shall be backfilled and compacted by spreading and rolling or compacted by mechanical rammers or tampers in layers not exceeding 8 inches. Tests for density shall be made as necessary to ensure conformance to the compaction requirements specified below. Where it is necessary, in the opinion of the Contracting Officer, that sheeting or portions of bracing used be left in place, the contract will be adjusted accordingly. Untreated sheeting shall not be left in place beneath structures or pavements.

3.7.2 Backfilling Pipe in Fill Sections

For pipe placed in fill sections, backfill material and the placement and compaction procedures shall be as specified below. The fill material shall be uniformly spread in layers longitudinally on both sides of the pipe, not exceeding 6 inches in compacted depth, and shall be compacted by rolling parallel with pipe or by mechanical tamping or ramming. Prior to commencing normal filling operations, the crown width of the fill at a height of 12 inches above the top of the pipe shall extend a distance of not less than twice the outside pipe diameter on each side of the pipe or 12 feet, whichever is less. After the backfill has reached at least 12 inches above the top of the pipe, the remainder of the fill shall be placed and thoroughly compacted in layers not exceeding 8 inches.

3.7.3 Movement of Construction Machinery

When compacting by rolling or operating heavy equipment parallel with the pipe, displacement of or injury to the pipe shall be avoided. Movement of construction machinery over a culvert or storm drain at any stage of construction shall be at the Contractor's risk. Any damaged pipe shall be repaired or replaced.

3.7.4 Compaction

3.7.4.1 General Requirements

Cohesionless materials include gravels, gravel-sand mixtures, sands, and gravelly sands. Cohesive materials include clayey and silty gravels, gravel-silt mixtures, clayey and silty sands, sand-clay mixtures, clays, silts, and very fine sands. When results of compaction tests for moisture-density relations are recorded on graphs, cohesionless soils will show straight

lines or reverse-shaped moisture-density curves, and cohesive soils will show normal moisture-density curves.

3.7.4.2 Minimum Density

Backfill over and around the pipe and backfill around and adjacent to drainage structures shall be compacted at the approved moisture content to the following applicable minimum density, which will be determined as specified below.

- a. Under paved roads, streets, parking areas, and similar-use pavements including adjacent shoulder areas, the density shall be not less than 90 percent of maximum density for cohesive material and 95 percent of maximum density for cohesionless material, up to the elevation where requirements for pavement subgrade materials and compaction shall control.
- b. Under unpaved or turfed traffic areas, density shall not be less than 90 percent of maximum density for cohesive material and 95 percent of maximum density for cohesionless material.
- c. Under non-traffic areas, density shall be not less than that of the surrounding material.

3.7.5 Determination of Density

Testing shall be the responsibility of the Contractor and performed at no additional cost to the Government. Testing shall be performed by an approved commercial testing laboratory. Tests shall be performed in sufficient number to ensure that specified density is being obtained. Laboratory tests for moisture-density relations shall be made in accordance with ASTM D 1557 except that mechanical tampers may be used provided the results are correlated with those obtained with the specified hand tamper. Field density tests shall be determined in accordance with ASTM D 1556, ASTM D 2167 or ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted, if necessary, using the sand cone method as described in paragraph Calibration of the referenced publications. ASTM D 2922 results in a wet unit weight of soil and when using this method ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017 or ASTM D 2922. Test results shall be furnished the Contracting Officer. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed.

3.8 PIPELINE TESTING

Lines shall be tested for leakage by low pressure air or water testing or exfiltration tests, as appropriate. Low pressure air testing for plastic pipe shall conform to ASTM F 1417. Prior to exfiltration tests, the trench shall be backfilled up to at least the lower half of the pipe. If required, sufficient additional backfill shall be placed to prevent pipe movement during testing, leaving the joints uncovered to permit inspection. Visible leaks encountered shall be corrected regardless of leakage test results. When the water table is 2 feet or more above the top of the pipe at the upper end of the pipeline section to be tested, infiltration shall be measured using a suitable weir or other device acceptable to the Contracting Officer. An exfiltration test shall be made by filling the line to be tested with water so that a head of at

least 2 feet is provided above both the water table and the top of the pipe at the upper end of the pipeline to be tested. The filled line shall be allowed to stand until the pipe has reached its maximum absorption, but not less than 4 hours. After absorption, the head shall be reestablished. The amount of water required to maintain this water level during a 2-hour test period shall be measured. Leakage as measured by the exfiltration test shall not exceed 0.2 gallons per inch in diameter per 100 feet of pipeline per hour. When leakage exceeds the maximum amount specified, satisfactory correction shall be made and retesting accomplished. Testing, correcting, and retesting shall be made at no additional cost to the Government.

END OF SECTION

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SECTION 02722

AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS (AASHTO)

AASHTO T 180 (1997) Moisture-Density Relations of Soils Using a
4.54-kg (10-lb) Rammer and a 457 mm (18-in) Drop

AASHTO T 224 (1996) Correction for Coarse Particles in the Soil
Compaction Test

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 29/C 29M (1997) Bulk Density ("Unit Weight") and Voids in
Aggregates

ASTM C 88 (1999a) Soundness of Aggregates by Use of Sodium
Sulfate or Magnesium Sulfate

ASTM C 117 (1995) Materials Finer Than 75 micrometer (No. 200)
Sieve in Mineral Aggregates by Washing

ASTM C 127 (1988; R 1993el) Specific Gravity and Absorption of
Course Aggregate

ASTM C 128 (1997) Specific Gravity and Absorption of Fine
Aggregate

ASTM C 131 (1996) Resistance to Degradation of Small-Size Coarse
Aggregate by Abrasion and Impact in the Los Angeles
Machine

ASTM C 136 (1996a) Sieve Analysis of Fine and Coarse Aggregates

ASTM D 75 (1987; R 1997) Sampling Aggregates

ASTM D 422 (1963; R 1998) Particle-Size Analysis of Soils

ASTM D 1556 (2000) Density and Unit Weight of Soil in Place by the
Sand-Cone Method

ASTM D 1557	(1991; R 1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1996el) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 11	(1995) Wire-Cloth Sieves for Testing Purposes

1.2 DEFINITIONS

For the purposes of this specification, the following definitions apply.

1.2.1 Aggregate Base Course

Aggregate base course (ABC) is well-graded, durable aggregate uniformly moistened and mechanically stabilized by compaction.

1.2.3 Degree of Compaction

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Plant, Equipment, and Tools;

List of proposed equipment to be used in performance of construction work, including descriptive data.

SD-06 Test Reports

Sampling and testing; G, RE
Field Density Tests; G, RE

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Certified copies of test results for approval not less than 15 days before material is required for the work.

1.5 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor. Sampling and testing shall be performed by a testing laboratory approved in accordance with Section 01451 CONTRACTOR QUALITY CONTROL. Work requiring testing will not be permitted until the testing laboratory has been inspected and approved. The materials shall be tested to establish compliance with the specified requirements; testing shall be performed at the specified frequency. The Contracting Officer may specify the time and location of the tests. Copies of test results shall be furnished to the Contracting Officer within 24 hours of completion of the tests.

1.5.1 Sampling

Samples for laboratory testing shall be taken in conformance with ASTM D 75. When deemed necessary, the sampling will be observed by the Contracting Officer.

1.5.2 Tests

The following tests shall be performed in conformance with the applicable standards listed.

1.5.2.1 Sieve Analysis

Sieve analysis shall be made in conformance with ASTM C 117 and ASTM C 136. Sieves shall conform to ASTM E 11.

1.5.2.2 Liquid Limit and Plasticity Index

Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.

1.5.2.3 Moisture-Density Determinations

The maximum density and optimum moisture content shall be determined in accordance with ASTM D 1557.

1.5.2.4 Field Density Tests

Density shall be field measured in accordance with ASTM D 2922. For the method presented in ASTM D 2922 the calibration curves shall be checked and adjusted if necessary using only the sand cone method as described in paragraph Calibration, of the ASTM publication. Tests performed in accordance with ASTM D 2922 result in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The

calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made by the prepared containers of material method, as described in paragraph Calibration of ASTM D 2922, on each different type of material being tested at the beginning of a job and at intervals as directed.

1.5.2.5 Wear Test

Wear tests shall be made on ABC course material in conformance with ASTM C 131.

1.5.3 Testing Frequency

1.5.3.1 Initial Tests

One of each of the following tests shall be performed on the proposed material prior to commencing construction to demonstrate that the proposed material meets all specified requirements when furnished. If materials from more than one source are going to be utilized, this testing shall be completed for each source.

- a. Sieve Analysis.
- b. Liquid limit and plasticity index.
- c. Moisture-density relationship.
- d. Wear.

1.5.3.2 In Place Tests

Each of the following tests shall be performed on samples taken from the placed and compacted ABC. Samples shall be taken and tested at the rates indicated.

- a. Density tests shall be performed on every lift of material placed and at a frequency of one set of tests for every 250 square yards, or portion thereof, of completed area.
- b. Sieve Analysis shall be performed for every 500 tons, or portion thereof, of material placed.
- c. Liquid limit and plasticity index tests shall be performed at the same frequency as the sieve analysis.

1.5.4 Approval of Material

The source of the material shall be selected 15 days prior to the time the material will be required in the work. Tentative approval of material will be based on initial test results. Final approval of the materials will be based on sieve analysis, liquid limit, and plasticity index tests performed on samples taken from the completed and fully compacted ABC.

1.6 WEATHER LIMITATIONS

Construction shall be done when the atmospheric temperature is above 35 degrees F. When the temperature falls below 35 degrees F, the Contractor shall protect all completed areas by approved methods against detrimental effects of freezing. Completed areas damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

1.7 PLANT, EQUIPMENT, AND TOOLS

All plant, equipment, and tools used in the performance of the work will be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the required compaction, meeting grade controls, thickness control, and smoothness requirements as set forth herein.

PART 2 PRODUCTS

2.1 AGGREGATES

The ABC shall consist of clean, sound, durable particles of crushed stone, crushed slag, crushed gravel, crushed recycled concrete, angular sand, or other approved material. ABC shall be free of lumps of clay, organic matter, and other objectionable materials or coatings. The portion retained on the No. 4 sieve shall be known as coarse aggregate; that portion passing the No. 4 sieve shall be known as fine aggregate.

2.1.1 Coarse Aggregate

Coarse aggregates shall be angular particles of uniform density. When the coarse aggregate is supplied from more than one source, aggregate from each source shall meet the specified requirements and shall be stockpiled separately.

a. Crushed Gravel: Crushed gravel shall be manufactured by crushing gravels, and shall meet all the requirements specified below.

b. Crushed Stone: Crushed stone shall consist of freshly mined quarry rock, and shall meet all the requirements specified below.

c. Crushed Recycled Concrete: Crushed recycled concrete shall consist of previously hardened portland cement concrete or other concrete containing pozzolanic binder material. The recycled material shall be free of all reinforcing steel, bituminous concrete surfacing, and any other foreign material and shall be crushed and processed to meet the required gradations for coarse aggregate. Crushed recycled concrete shall meet all other applicable requirements specified below.

2.1.1.1 Aggregate Base Course

ABC coarse aggregate shall not show more than 50 percent loss when subjected to the Los Angeles abrasion test in accordance with ASTM C 131. The amount of flat and elongated particles shall not exceed 30 percent. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3. In

the portion retained on each sieve specified, the crushed aggregates shall contain at least 50 percent by weight of crushed pieces having two or more freshly fractured faces with the area of each face being at least equal to 75 percent of the smallest midsectional area of the piece. When two fractures are contiguous, the angle between planes of the fractures must be at least 30 degrees in order to count as two fractured faces. Crushed gravel shall be manufactured from gravel particles 50 percent of which, by weight, are retained on the maximum size sieve listed in TABLE 1.

2.1.2 Fine Aggregate

Fine aggregates shall be angular particles of uniform density. When the fine aggregate is supplied from more than one source, aggregate from each source shall meet the specified requirements.

2.1.2.1 Aggregate Base Course

ABC fine aggregate shall consist of screenings, angular sand, crushed recycled concrete fines, or other finely divided mineral matter processed or naturally combined with the coarse aggregate.

2.1.3 Gradation Requirements

The specified gradation requirements shall apply to the completed base course. The aggregates shall have a maximum size of 1-inch and shall be continuously well graded within the limits specified in TABLE 1. Sieves shall conform to ASTM E 11.

TABLE 1. GRADATION OF AGGREGATES

Percentage by Weight Passing Square-Mesh Sieve

Sieve Designation -----	
1 inch	100
1/2 inch	40-70
No. 4	20-50
No. 10	15-40
No. 40	5-25
No. 200	0-8

NOTE 1: The values are based on aggregates of uniform specific gravity. If materials from different sources are used for the coarse and fine aggregates, they shall be tested in accordance with ASTM C 127 and ASTM C 128 to determine their specific gravities. If the specific gravities vary by more than 10 percent, the percentages passing the various sieves shall be corrected as directed by the Contracting Officer.

2.1.4 Liquid Limit and Plasticity Index

Liquid limit and plasticity index requirements shall apply to the completed course and shall also apply to any component that is blended to meet the required gradation. The portion of

any component or of the completed course passing the No. 40 sieve shall be either nonplastic or have a liquid limit not greater than 25 and a plasticity index not greater than 5.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

When the ABC is constructed in more than one layer, the previously constructed layer shall be cleaned of loose and foreign matter by sweeping with power sweepers or power brooms, except that hand brooms may be used in areas where power cleaning is not practicable. Adequate drainage shall be provided during the entire period of construction to prevent water from collecting or standing on the working area. Line and grade stakes shall be provided as necessary for control. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining.

3.2 OPERATION OF AGGREGATE SOURCES

Aggregates shall be obtained from offsite sources.

3.4 PREPARATION OF UNDERLYING COURSE

Prior to constructing the ABC, the underlying course or subgrade shall be cleaned of all foreign substances. At the time of construction of the ABC, the underlying course shall contain no frozen material. The surface of the underlying course or subgrade shall meet specified compaction and surface tolerances. The underlying course shall conform to Section 02300 EARTHWORK. Ruts or soft yielding spots in the underlying courses, areas having inadequate compaction, and deviations of the surface from the requirements set forth herein shall be corrected by loosening and removing soft or unsatisfactory material and by adding approved material, reshaping to line and grade, and recompacting to specified density requirements. For cohesionless underlying courses containing sands or gravels, as defined in ASTM D 2487, the surface shall be stabilized prior to placement of the ABC. Stabilization shall be accomplished by mixing ABC into the underlying course and compacting by approved methods. The stabilized material shall be considered as part of the underlying course and shall meet all requirements of the underlying course. The finished underlying course shall not be disturbed by traffic or other operations and shall be maintained by the Contractor in a satisfactory condition until the ABC is placed.

3.5 INSTALLATION

3.5.1 Mixing the Materials

The coarse and fine aggregates shall be mixed in a stationary plant, or in a traveling plant or bucket loader on an approved paved working area. The Contractor shall make adjustments in mixing procedures or in equipment as directed to obtain true grades, to minimize segregation or degradation, to obtain the required water content, and to insure a satisfactory ABC meeting all requirements of this specification.

3.5.2 Placing

The mixed material shall be placed on the prepared subgrade or subbase in layers of uniform thickness with an approved spreader. When a compacted layer 6 inches or less in thickness

is required, the material shall be placed in a single layer. When a compacted layer in excess of 6 inches is required, the material shall be placed in layers of equal thickness. No layer shall exceed 6 inches or less than 3 inches when compacted. The layers shall be so placed that when compacted they will be true to the grades or levels required with the least possible surface disturbance. Where the ABC is placed in more than one layer, the previously constructed layers shall be cleaned of loose and foreign matter by sweeping with power sweepers, power brooms, or hand brooms, as directed. Such adjustments in placing procedures or equipment shall be made as may be directed to obtain true grades, to minimize segregation and degradation, to adjust the water content, and to insure an acceptable ABC.

3.5.3 Grade Control

The finished and completed ABC shall conform to the lines, grades, and cross sections shown. Underlying material(s) shall be excavated and prepared at sufficient depth for the required ABC thickness so that the finished ABC with the subsequent surface course will meet the designated grades.

3.5.4 Edges of Base Course

The ABC shall be placed so that the completed section will be a minimum of 5 feet wider, on all sides, than the next layer that will be placed above it. Additionally, approved fill material shall be placed along the outer edges of ABC in sufficient quantities to compact to the thickness of the course being constructed, or to the thickness of each layer in a multiple layer course, allowing in each operation at least a 2 foot width of this material to be rolled and compacted simultaneously with rolling and compacting of each layer of ABC. If this base course material is to be placed adjacent to another pavement section, then the layers for both of these sections shall be placed and compacted along this edge at the same time.

3.5.5 Compaction

Each layer of the ABC shall be compacted as specified with approved compaction equipment. Water content shall be maintained during the compaction procedure to within plus or minus 2 percent of the optimum water content determined from laboratory tests as specified in paragraph SAMPLING AND TESTING. Rolling shall begin at the outside edge of the surface and proceed to the center, overlapping on successive trips at least one-half the width of the roller. Alternate trips of the roller shall be slightly different lengths. Speed of the roller shall be such that displacement of the aggregate does not occur. In all places not accessible to the rollers, the mixture shall be compacted with hand-operated power tampers. Compaction shall continue until each layer has a degree of compaction that is at least 95 percent of laboratory maximum density through the full depth of the layer. The Contractor shall make such adjustments in compacting or finishing procedures as may be directed to obtain true grades, to minimize segregation and degradation, to reduce or increase water content, and to ensure a satisfactory ABC. Any materials that are found to be unsatisfactory shall be removed and replaced with satisfactory material or reworked, as directed, to meet the requirements of this specification.

3.5.6 Thickness

Compacted thickness of the aggregate course shall be as indicated. No individual layer shall exceed 6 inches nor be less than 3 inches in compacted thickness. The total compacted thickness of the ABC course shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected by

scarifying, adding new material of proper gradation, reblading, and recompacting as directed. Where the measured thickness is more than 1/2 inch thicker than indicated, the course shall be considered as conforming to the specified thickness requirements. Average job thickness shall be the average of all thickness measurements taken for the job, but shall be within 1/4 inch of the thickness indicated. The total thickness of the ABC course shall be measured at intervals in such a manner as to ensure one measurement for each 500 yards of base course. Measurements shall be made in 3 inch diameter test holes penetrating the base course.

3.5.8 Finishing

The surface of the top layer of ABC shall be finished after final compaction by cutting any overbuild to grade and rolling with a steel-wheeled roller. Thin layers of material shall not be added to the top layer of base course to meet grade. If the elevation of the top layer of ABC is 1/2 inch or more below grade, then the top layer should be scarified to a depth of at least 3 inches and new material shall be blended in [and compacted] to bring to grade. Adjustments to rolling and finishing procedures shall be made as directed to minimize segregation and degradation, obtain grades, maintain moisture content, and insure an acceptable base course. Should the surface become rough, corrugated, uneven in texture, or traffic marked prior to completion, the unsatisfactory portion shall be scarified, reworked and recompact or it shall be replaced as directed.

3.5.9 Smoothness

The surface of the top layer shall show no deviations in excess of 3/8 inch when tested with a 10 foot straightedge. Measurements shall be taken in successive positions parallel to the centerline of the area to be paved. Measurements shall also be taken perpendicular to the centerline at 50 foot intervals. Deviations exceeding this amount shall be corrected by removing material and replacing with new material, or by reworking existing material and compacting it to meet these specifications.

3.6 TRAFFIC

Completed portions of the ABC course may be opened to limited traffic, provided there is no marring or distorting of the surface by the traffic. Heavy equipment shall not be permitted except when necessary to construction, and then the area shall be protected against marring or damage to the completed work.

3.7 MAINTENANCE

The ABC shall be maintained in a satisfactory condition until the full pavement section is completed and accepted. Maintenance shall include immediate repairs to any defects and shall be repeated as often as necessary to keep the area intact. Any ABC that is not paved over prior to the onset of winter, shall be retested to verify that it still complies with the requirements of this specification. Any area of ABC that is damaged shall be reworked or replaced as necessary to comply with this specification.

3.8 DISPOSAL OF UNSATISFACTORY MATERIALS

Any unsuitable materials that must be removed shall become the property of the Contractor disposed of off site. No additional payments will be made for materials that must be replaced.

END OF SECTION

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SECTION 02731

AGGREGATE SURFACE COURSE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 117	(1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	(1996) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	(1987; R 1997) Sampling Aggregates
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 1556	(1990; R 1996el) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991; R 1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2922	(1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1996el) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 3740	(1999c) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D 4318	(1998) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 11	(1995) Wire-Cloth Sieves for Testing Purposes

1.3 DEGREE OF COMPACTION

Degree of compaction is a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated herein as present laboratory maximum density.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment

List of proposed equipment to be used in performance of construction work including descriptive data.

SD-06 Test Reports

Sampling and Testing; G, RE Density Tests; G, RE

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Test results from samples, not less than 30 days before material is required for the work. Results of laboratory tests for quality control purposes, for approval, prior to using the material.

1.5 EQUIPMENT

All plant, equipment, and tools used in the performance of the work covered by this section will be subject to approval by the Contracting Officer before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the required compaction, and meeting the grade controls, thickness controls, and smoothness requirements set forth herein.

1.6 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor. Sampling and testing shall be performed by an approved commercial testing laboratory.

1.6.1 Sampling

Sampling for material gradation, liquid limit, and plastic limit tests shall be taken in conformance with ASTM D 75. When deemed necessary, the sampling will be observed by the Contracting Officer.

1.6.2 Testing

1.6.2.1 Gradation

Aggregate gradation shall be made in conformance with ASTM C 117, ASTM C 136, and ASTM D 422. Sieves shall conform to ASTM E 11.

1.6.2.2 Liquid Limit and Plasticity Index

Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.

1.6.3 Approval of Materials

The source of the material to be used for producing aggregates shall be selected 30 days prior to the time the material will be required in the work. Approval of sources not already approved by the Corps of Engineers will be based on an inspection by the Contracting Officer. Tentative approval of materials will be based on appropriate test results on the aggregate source. Final approval of the materials will be based on tests for gradation, liquid limit, and plasticity index performed on samples taken from the completed and compacted surface course.

1.7 WEATHER LIMITATIONS

Aggregate surface courses shall not be constructed when the ambient temperatures is below 35 degrees F and on subgrades that are frozen or contain frost. It shall be the responsibility of the Contractor to protect, by approved method or methods, all areas of surfacing that have not been accepted by the Contracting Officer. Surfaces damaged by freeze, rainfall, or other weather conditions shall be brought to a satisfactory condition by the Contractor.

PART 2 PRODUCTS

2.1 AGGREGATES

Aggregates shall consist of clean, sound, durable particles of natural gravel, crushed gravel, crushed stone, sand, slag, soil, or other approved materials processed and blended or naturally combined. Aggregates shall be free from lumps and balls of clay, organic matter, objectionable coatings, and other foreign materials. The Contractor shall be responsible for obtaining materials that meet the specification and can be used to meet the grade and smoothness requirements specified herein after all compaction and have been completed.

2.1.1 Coarse Aggregates

The material retained on the No. 4 sieve shall be known as coarse aggregate. Coarse aggregates shall be reasonably uniform in density and quality. The coarse aggregate shall have a percentage of wear not to exceed 35 percent after 500 revolutions as determined by ASTM C 131. The percentage retained on the No. 4 sieve having at least one fractured face shall be a minimum of 60 percent. The amount of flat and/or elongated particles shall not exceed 20 percent. A flat particle is one having a ratio of width to thickness greater than three; an elongated particle is one having a ratio of length to width greater than three. When

the coarse aggregate is supplied from more than one source, aggregate from each source shall meet the requirements set forth herein.

2.1.2 Fine Aggregates

The material passing the No. 4 sieve shall be known as fine aggregate. Fine aggregate shall consist of screenings, sand, soil, or other finely divided mineral matter that is processed or naturally combined with the coarse aggregate.

2.1.3 Gradation Requirements

Gradation requirements specified in TABLE I shall apply to the completed aggregate surface. It shall be the responsibility of the Contractor to obtain materials that will meet the gradation requirements after mixing, placing, compacting, and other operations. TABLE I shows permissible gradings for granular material used in aggregate surface roads and airfields. Sieves shall conform to ASTM E 11.

TABLE I. GRADATION FOR AGGREGATE SURFACE COURSES

Sieve Designation

1 in.	100
3/4 in.	90-100
No. 4	40-65
No. 8	30-50
No. 200	3-9

2.2 LIQUID LIMIT AND PLASTICITY INDEX REQUIREMENTS

The portion of the completed aggregate surface course passing the No. 40 sieve shall have a maximum liquid limit of 35 and a plasticity index of 4 to 9.

PART 3 EXECUTION

3.1 OPERATION OF AGGREGATE SOURCES

Clearing, stripping, and excavating shall be the responsibility of the Contractor. The aggregate sources shall be operated to produce the quantity and quality of materials meeting these specification requirements in the specified time limit. Upon completion of the work, the aggregate sources on Government property shall be conditioned to drain readily and be left in a satisfactory condition. Aggregate sources on private lands shall be conditioned in agreement with local laws or authorities.

3.2 STOCKPILING MATERIALS

Prior to stockpiling the material, the storage sites shall be cleared and leveled by the Contractor. All materials, including approved material available from excavation and grading, shall be stockpiled in the manner and at the locations designated. Aggregates shall be stockpiled in such a manner that will prevent segregation. Aggregates and binders obtained from different sources shall be stockpiled separately.

3.3 PREPARATION OF UNDERLYING COURSE SUBGRADE

The underlying course, including shoulders, shall be cleaned of all foreign substances. At the time of surface course construction, the underlying course shall contain no frozen material. Ruts or soft yielding spots in the underlying course areas having inadequate compaction and deviations of the surface from the requirements set forth herein shall be corrected by loosening and removing soft or unsatisfactory material and by adding approved material, reshaping to line and grade and recompacting to density requirements as specified. The completed underlying course shall not be disturbed by traffic or other operations and shall be maintained by the Contractor in a satisfactory condition until the surface course is placed.

3.4 GRADE CONTROL

During construction, the lines and grades including crown and cross slope indicated for the aggregate surface course shall be maintained by means of line and grade stakes placed by the Contractor in accordance with the SPECIAL CONTRACT REQUIREMENTS.

3.5 MIXING AND PLACING MATERIALS

The materials shall be mixed and placed to obtain uniformity of the material and a uniform optimum water content for compaction. The Contractor shall make adjustments in mixing, placing procedures, or in equipment to obtain the true grades, to minimize segregation and degradation, to obtain the desired water content, and to ensure a satisfactory surface course.

3.6 LAYER THICKNESS

The aggregate material shall be placed on the underlying course in layers of uniform thickness. When a compacted layer of 6 inches or less is specified, the material may be placed in a single layer; when a compacted thickness of more than 6 inches is required, no layer shall exceed 6 inches nor be less than 3 inches when compacted.

3.7 COMPACTION

Each layer of the aggregate surface course shall be compacted with approval compaction equipment. The water content during the compaction procedure shall be maintained at optimum or at the percentage specified by the Contracting Officer. In locations not accessible to the rollers, the mixture shall be compacted with mechanical tampers. Compaction shall continue until each layer through the full depth is compacted to at least 100 percent of laboratory maximum density. Any materials that are found to be unsatisfactory shall be removed and replaced with satisfactory material or reworked to produce a satisfactory material.

3.9 EDGES OF AGGREGATE-SURFACED ROAD

Approved material shall be placed along the edges of the aggregate surface course in such quantity as to compact to the thickness of the course being constructed. When the course is being constructed in two or more layers, at least 1 foot of shoulder width shall be rolled and compacted simultaneously with the rolling and compacting of each layer of the surface course.

3.10 SMOOTHNESS TEST

The surface of each layer shall not show any deviations in excess of 3/8 inch when tested with a 10 foot straightedge applied both parallel with and at right angles to the centerline of

the area to be paved. Deviations exceeding this amount shall be corrected by the Contractor by removing material, replacing with new material, or reworking existing material and compacting, as directed.

3.11 THICKNESS CONTROL

The completed thickness of the aggregate surface course shall be within 1/4 inch, plus or minus, of the thickness indicated on plans. The thickness of the aggregate surface course shall be measured at intervals in such manner that there will be a thickness measurement for at least each 500 square yards of the aggregate surface course. The thickness measurement shall be made by test holes at least 3 inches in diameter through the aggregate surface course. When the measured thickness of the aggregate surface course is more than 1/4 inch deficient in thickness, the Contractor, at no additional expense to the Government, shall correct such areas by scarifying, adding mixture of proper gradation, reblading, and recompact, as directed. Where the measured thickness of the aggregate surface course is more than 1/4 inch thicker than that indicated, it shall be considered as conforming with the specified thickness requirements plus 1/2 inch. The average job thickness shall be the average of the job measurements determined as specified above, but shall be within 1/4 inch of the thickness indicated. When the average job thickness fails to meet this criterion, the Contractor shall, at no additional expense to the Government, make corrections by scarifying, adding or removing mixture of proper gradation, and reblading and recompact, as directed.

3.12 DENSITY TESTS

Density shall be measured in the field in accordance with ASTM D 2922. For the method presented in ASTM D 2922 the calibration curves shall be checked and adjusted, if necessary, using only the sand cone method as described in paragraph Calibration of the ASTM publication. Tests performed in accordance with ASTM D 2922 result in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made by the prepared containers of material method, as described in paragraph Calibration of ASTM D 2922, on each different type of material being tested at the beginning of a job and at intervals, as directed.

3.13 WEAR TEST

Wear tests shall be made in conformance with ASTM C 131.

3.14 MAINTENANCE

The aggregate surface course shall be maintained in a condition that will meet all specification requirements until accepted.

END OF SECTION

SECTION 02741

HOT-MIX ASPHALT (HMA) FOR ROADS

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO MP 1	(1998) Provisional Specification for Performance Graded Asphalt Binder
AASHTO MP 2	(1998; Interim 1999) Superpave Volumetric Mix Design
AASHTO TP53	(1998; Interim 1999) Determining Asphalt Content of Hot Mix Asphalt by the Ignition Method

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 29/C 29M	(1997) Bulk Density ("Unit Weight") and Voids in Aggregates
ASTM C 88	(1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	(1995) Materials Finer than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	(1996) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM C 566	(1997) Evaporable Total Moisture Content of Aggregate by Drying
ASTM C 1252	(1998) Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)
ASTM D 140	(1998) Sampling Bituminous Materials
ASTM D 242	(1995) Mineral Filler for Bituminous Paving Mixtures
ASTM D 946	(1999) Penetration-Graded Asphalt Cement for Use in Pavement Construction

ASTM D 995	(1995b) Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
ASTM D 1461	(1985)) Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D 1559	(1989) Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
ASTM D 2041	(1995) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	(1995) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2419	(1995) Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2489	(1984; R 1994el) Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D 2726	(1996el) Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixture
ASTM D 2950	(1997) Density of Bituminous Concrete in Place by Nuclear Method
ASTM D 3381	(1999) Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 3665	(1999) Random Sampling of Construction Materials
ASTM D 3666	(1998) Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials
ASTM D 4125	(1994el)Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D 4791	(1999) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D 4867/D 4867M	(1996) Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D 5444	(1998) Mechanical Size Analysis of Extracted Aggregate
ASTM D 6307	(1998) Asphalt Content of Hot Mix Asphalt by Ignition Method

ASPHALT INSTITUTE (AI)

AI MS-2 (1997) Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types

AI MS-22 (1998; 2nd Edition) Construction of Hot-Mix Asphalt Pavements

WASHINGTON STATE TRANSPORTATION DEPARTMENT (WSDOT)

M 41-10 (2000) Standard Specifications for Road, Bridge, and Municipal Construction

CORPS OF ENGINEERS (COE)

COE CRD-C 171 (1995) Test Method for Determining Percentage of Crushed Particles in Aggregate

1.2 DESCRIPTION OF WORK

The work shall consist of pavement courses composed of mineral aggregate and asphalt material heated and mixed in a central mixing plant and placed on a prepared course. HMA designed and constructed in accordance with this section shall conform to the lines, grades, thickness, and typical cross sections shown on the drawings. Each course shall be constructed to the depth, section, or elevation required by the drawings and shall be rolled, finished, and approved before the placement of the next course.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Mix Design; G, RE.

Proposed JMF.

Contractor Quality Control; G, RE.

Quality control plan.

SD-06 Test Reports

Aggregates; G, RE.

QC Monitoring; G, RE.

Aggregate and QC test results.

SD-07 Certificates

Asphalt Cement Binder; G, RE.

Copies of certified test data.

Testing Laboratory; G, RE.

Certification of compliance.

Plant Scale Calibration Certification

1.6 ASPHALT MIXING PLANT

Plants used for the preparation of hot-mix asphalt shall conform to the requirements of ASTM D 995 with the following changes:

a. Truck Scales. The asphalt mixture shall be weighed on approved certified scales at the Contractor's expense. Scales shall be inspected and sealed at least annually by an approved calibration laboratory.

b. Testing Facilities. The Contractor shall provide laboratory facilities at the plant for the use of the Government's acceptance testing and the Contractor's quality control testing.

c. Inspection of Plant. The Contracting Officer shall have access at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant; verifying weights, proportions, and material properties; checking the temperatures maintained in the preparation of the mixtures and for taking samples. The Contractor shall provide assistance as requested, for the Government to procure any desired samples.

d. Storage Bins. Use of storage bins for temporary storage of hot-mix asphalt will be permitted as follows:

(1) The asphalt mixture may be stored in non-insulated storage bins for a period of time not exceeding 3 hours.

(2) The asphalt mixture may be stored in insulated storage bins for a period of time not exceeding 8 hours. The mix drawn from bins shall meet the same requirements as mix loaded directly into trucks.

1.7 HAULING EQUIPMENT

Trucks used for hauling hot-mix asphalt shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other approved material. Petroleum based products shall not be used as a release agent. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers (tarps) shall be securely fastened.

1.8 ASPHALT PAVERS

Asphalt pavers shall be self-propelled, with an activated screed, heated as necessary, and shall be capable of spreading and finishing courses of hot-mix asphalt which will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

1.8.1 Receiving Hopper

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

1.8.2 Automatic Grade Controls

If an automatic grade control device is used, the paver shall be equipped with a control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices, which will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent. A transverse slope controller shall not be used to control grade. The controls shall be capable of working in conjunction with any of the following attachments:

- a. Ski-type device of not less than 30 feet in length.
- b. Taut stringline set to grade.
- c. Short ski or shoe for joint matching.
- d. Laser control.

1.9 ROLLERS

Rollers shall be in good condition and shall be operated at slow speeds to avoid displacement of the asphalt mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition. Equipment, which causes excessive crushing of the aggregate, shall not be used.

1.10 WEATHER LIMITATIONS AND CUTOFF DATES FOR PAVING

Weather limitations and cutoff dates for paving shall be in accordance with WSDOT M 41-10. The hot-mix asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 1. The temperature requirements may be waived by the Contracting Officer, if requested; however, all other requirements, including compaction, shall be met.

Table 1. Surface Temperature Limitations of Underlying Course

<u>Mat Thickness (feet)</u>	<u>Degrees F</u>
Less than 0.10 ft	55
0.10 to 0.20 ft	45
0.21 to 0.35 ft	35
More than 0.35 ft	DNA

PART 2 PRODUCTS

Hot mix asphalt shall meet the requirements for Class B Mix in conformance with WSDOT M 41-10, 5.04, ASPHALT CONCRETE PAVEMENT.

2.1 AGGREGATES

Aggregates for hot-mix asphalt shall be in accordance with WSDOT M 41-10, 9-03.8. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand and mineral filler, as required. The portion of material retained on the No. 4 sieve is coarse aggregate. The portion of material passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate. The portion passing the No. 200 sieve is defined as mineral filler. All aggregate test results and samples shall be submitted to the Contracting Officer at least 14 days prior to start of construction.

2.1.1 Coarse Aggregate

Coarse aggregate shall consist of sound, tough, durable particles, free from films of material that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. The coarse aggregate stockpiles shall contain less than twelve percent of minus No. 4 material.

- a. The percentage of loss shall not be greater than 30 percent after 500 revolutions when tested in accordance with ASTM C 131.
- b. The percentage of loss shall not be greater than 18 percent after five cycles when tested in accordance with ASTM C 88 using magnesium sulfate, or 12 percent when using sodium sulfate.
- c. The fracture requirements are at least one fractured face on 75 percent of the material retained on each specification sieve size U.S. No. 10 and above, if that sieve retains more than 5 percent of the total sample.
- d. The particle shape shall be essentially cubical and the aggregate shall not contain more than 20% percent, by weight, of flat and elongated particles (3:1 ratio of maximum to minimum) when tested in accordance with ASTM D 4791.

2.1.2 Fine Aggregate

Fine aggregate shall consist of clean, sound, tough, durable particles. The aggregate particles shall be free from coatings of clay, silt, or any objectionable material and shall

contain no clay balls. All individual fine aggregate sources shall have a sand equivalent value not less than 45 when tested in accordance with ASTM D 2419.

The fine aggregate portion of the blended aggregate shall have an uncompacted void content not less than 43.0 percent when tested in accordance with ASTM C 1252 Method A.

2.1.3 Mineral Filler

Mineral filler shall be nonplastic material meeting the requirements of ASTM D 242.

2.1.4 Aggregate Gradation

The combined aggregate gradation shall conform to gradations specified in Table 2, when tested in accordance with ASTM C 136 and ASTM C 117, and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve or vice versa, but grade uniformly from coarse to fine.

Table 2. Aggregate Gradations

<u>Sieve Size, inch</u>	<u>Percent Passing by Mass</u>
3/4	100
1/2	90-100
3/8	75-90
1/4	55-75
No. 10	30-42
No. 40	11-24
No. 200	3-7

2.2 ASPHALT CEMENT BINDER

Asphalt cement binder shall conform to ASTM D 3381 Table 2, Viscosity Grade, AR-4000W. Test data indicating grade certification shall be provided by the supplier at the time of delivery of each load to the mix plant. Copies of these certifications shall be submitted to the Contracting Officer. The supplier is defined as the last source of any modification to the binder. The Contracting Officer may sample and test the binder at the mix plant at any time before or during mix production. Samples for this verification testing shall be obtained by the Contractor in accordance with ASTM D 140 and in the presence of the Contracting Officer. These samples shall be furnished to the Contracting Officer for the verification testing, which shall be at no cost to the Contractor. Samples of the asphalt cement specified shall be submitted for approval not less than 14 days before start of the test section.

2.3 MIX DESIGN

The Contractor shall develop the mix design. The asphalt mix shall be composed of a mixture of well-graded aggregate, mineral filler if required, and asphalt material. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF). No hot-mix asphalt for payment shall be produced until a JMF has been approved. The hot-mix asphalt shall be designed using procedures contained in AI MS-2 and the criteria

shown in Table 3. If the Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867/D 4867M is less than 75, the aggregates shall be rejected or the asphalt mixture treated with an approved anti-stripping agent. The amount of anti-stripping agent added shall be sufficient to produce a TSR of not less than 75. If an antistrip agent is required, it shall be provided by the Contractor at no additional cost.

At the option of the Contractor, a currently used DOT "Superpave" hot mix JMF may be used in lieu of developing a new hot mix design study as described herein. The superpave volumetric mix shall be designed in accordance with AASHTO MP 2.

2.3.1 JMF Requirements

The job mix formula shall be submitted in writing by the Contractor for approval at least 14 days prior to the start of the test section and shall include as a minimum:

- a. Percent passing each sieve size.
- b. Percent of asphalt cement.
- c. Percent of each aggregate and mineral filler to be used.
- d. Asphalt, viscosity grade.
- e. Number of blows of hammer per side of molded specimen.
- f. Laboratory mixing temperature.
- g. Lab compaction temperature.
- h. Temperature-viscosity relationship of the asphalt cement.
- i. Plot of the combined gradation on the 0.45 power gradation chart, stating the nominal maximum size.
- j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content as shown in AI MS-2.
- k. Specific gravity and absorption of each aggregate.
- l. Percent natural sand.
- m. Percent particles with 2 or more fractured faces (in coarse aggregate).
- n. Fine aggregate angularity.
- o. Percent flat or elongated particles (in coarse aggregate).
- p. Tensile Strength Ratio(TSR).
- q. Antistrip agent (if required) and amount.

r. List of all modifiers and amount.

Table 3. Marshall Design Criteria

<u>Test Property</u>	<u>75 Blow Mix</u>	<u>50 Blow Mix</u>
Stability, pounds minimum	*1800	*1000
Flow, 0.01 inch	8-16	8-18
Air voids, percent	3-5	3-5
Percent Voids in mineral aggregate VMA, (minimum)	14.0	14.0
TSR, minimum percent	75	75

* This is a minimum requirement. The average during construction shall be significantly higher than this number to ensure compliance with the specifications.

** Calculate VMA in accordance with AI MS-2, based on ASTM D 2726 bulk specific gravity for the aggregate.

Table 3. Hveem Design Criteria

<u>Test Property</u>	
Stability, minimum	30
Film Thickness, minimum	6 microns
Fine Aggregate Angularity, (minimum)	40
Air voids, percent	3-5
Percent Voids in mineral aggregate VMA, (minimum)	14.0
Immersion Compression, %, (minimum)	75

2.3.2 Adjustments to Field JMF

The Laboratory JMF for each mixture shall be in effect until a new formula is approved in writing by the Contracting Officer. Should a change in sources of any materials be made, a new laboratory JMF design shall be performed and a new JMF approved before the new material is used. The Contractor will be allowed to adjust the Laboratory JMF within the limits specified below to optimize mix volumetric properties with the approval of the Contracting Officer. Adjustments to the Laboratory JMF shall be applied to the field (plant) established JMF and limited to those values as shown. Adjustments shall be targeted to produce or nearly produce 4 percent voids total mix (VTM).

TABLE 4. Field (Plant) Established JMF Tolerances

<u>Sieves</u>	<u>Adjustments (plus or minus), percent</u>
No. 4	4
No. 8	2
No. 200	0.4
Binder Content	0.3

If adjustments are needed that exceed these limits, a new mix design shall be developed. Tolerances given above may permit the aggregate grading to be outside the limits shown in Table 2; while not desirable, this is acceptable.

PART 3 EXECUTION

3.1 PREPARATION OF ASPHALT BINDER MATERIAL

The asphalt cement material shall be heated avoiding local overheating and providing a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature of unmodified asphalts shall be no more than 325 degrees F when added to the aggregates. Modified asphalts shall be no more than 350 degrees F when added to the aggregates.

3.2 PREPARATION OF MINERAL AGGREGATE

The aggregate for the mixture shall be heated and dried prior to mixing. No damage shall occur to the aggregates due to the maximum temperature and rate of heating used. The temperature of the aggregate and mineral filler shall not exceed 350 degrees F when the asphalt cement is added. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

3.3 PREPARATION OF HOT-MIX ASPHALT MIXTURE

The aggregates and the asphalt cement shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but no less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of

coated particles described in ASTM D 2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to at least achieve 95 percent of coated particles. The moisture content of all hot-mix asphalt upon discharge from the plant shall not exceed 0.5 percent by total weight of mixture as measured by ASTM D 1461.

3.4 PREPARATION OF THE UNDERLYING SURFACE

Immediately before placing the hot mix asphalt, the underlying course shall be cleaned of dust and debris.

3.6 TESTING LABORATORY

The laboratory used to develop the JMF shall meet the requirements of ASTM D 3666. A certification signed by the manager of the laboratory stating that it meets these requirements or clearly listing all deficiencies shall be submitted to the Contracting Officer prior to the start of construction. The certification shall contain as a minimum:

- a. Qualifications of personnel; laboratory manager, supervising technician, and testing technicians.
- b. A listing of equipment to be used in developing the job mix.
- c. A copy of the laboratory's quality control system.
- d. Evidence of participation in the AASHTO Materials Reference Laboratory (AMRL) program.

3.7 TRANSPORTING AND PLACING

3.7.1 Transporting

The hot-mix asphalt shall be transported from the mixing plant to the site in clean, tight vehicles. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Adequate artificial lighting shall be provided for night placements. Hauling over freshly placed material will not be permitted until the material has been compacted as specified, and allowed to cool to 140 degrees F.

3.7.2 Placing

The mix shall be placed and compacted at a temperature suitable for obtaining density, surface smoothness, and other specified requirements. Upon arrival, the mixture shall be placed to the full width by an asphalt paver; it shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of 10 feet. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot; however, the joint in the surface course shall be at the centerline of the pavement. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes

shall be offset a minimum of 10 feet. On isolated areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools.

3.8 COMPACTION OF MIXTURE

After placing, the mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be compacted as soon as possible without causing displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once. Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained. To prevent adhesion of the mixture to the roller, the wheels shall be kept properly moistened but excessive water will not be permitted. In areas not accessible to the roller, the mixture shall be thoroughly compacted with hand tampers. Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or is in any way defective shall be removed full depth, replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching will not be allowed.

3.9 JOINTS

The formation of joints shall be made ensuring a continuous bond between the courses and to obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

3.9.1 Transverse Joints

The roller shall not pass over the unprotected end of the freshly laid mixture, except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing material at the joint. The cutback material shall be removed from the project. In both methods, all contact surfaces shall be given a light tack coat of asphalt material before placing any fresh mixture against the joint.

3.9.2 Longitudinal Joints

Longitudinal joints that are irregular, damaged, uncompacted, cold (less than 175 degrees F at the time of placing adjacent lanes), or otherwise defective, shall be cut back a minimum of 2 inches from the edge with a cutting wheel to expose a clean, sound vertical surface for the full depth of the course. All cutback material shall be removed from the project. All contact surfaces shall be given a light tack coat of asphalt material prior to placing any fresh mixture against the joint. The Contractor will be allowed to use an alternate method if it can be demonstrated that density, smoothness, and texture can be met.

3.10 CONTRACTOR QUALITY CONTROL

3.10.1 General Quality Control Requirements

The Contractor shall develop an approved Quality Control Plan. Hot-mix asphalt for payment shall not be produced until the quality control plan has been approved. The plan shall address all elements which affect the quality of the pavement including, but not limited to:

- a. Mix Design
- b. Aggregate Grading
- c. Quality of Materials
- d. Stockpile Management
- e. Proportioning
- f. Mixing and Transportation
- g. Mixture Volumetrics
- h. Moisture Content of Mixtures
- i. Placing and Finishing
- j. Joints
- k. Compaction
- l. Surface Smoothness

3.10.2 Testing Laboratory

The Contractor shall attain the services of a commercially-approved independent testing laboratory. The laboratory shall meet the requirements as required in ASTM D 3666. The effective working area of the laboratory shall be a minimum of 150 square feet with a ceiling height of not less than 7.5 feet. Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 75 degrees F plus or minus 5 degrees F. Laboratory facilities shall be kept clean and all equipment shall be maintained in proper working condition. The Contracting Officer shall be permitted unrestricted access to inspect the Contractor's laboratory facility, to witness quality control activities, and to perform any check testing desired. The Contracting Officer will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to adversely affect test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are corrected.

3.10.3 Quality Control Testing

The Contractor shall perform all quality control tests applicable to these specifications and as set forth in the Quality Control Program. The testing program shall include, but shall not be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, moisture in the asphalt mixture, laboratory air voids, stability, flow, in-place density, grade and smoothness. A Quality Control Testing Plan shall be developed as part of the Quality Control Program. Acceptance of the plant produced mix and in-place requirements will be on a lot to lot basis. A standard lot for all requirements will be equal to one day of production. In order to evaluate laboratory air voids and in-place (field) density, each lot will be divided into four equal sublots.

3.10.3.1 Asphalt Content

A minimum of two tests to determine asphalt content will be performed per lot by one of the following methods: the extraction method in accordance with ASTM D 2172, Method A or B, the ignition method in accordance with the AASHTO TP53 or ASTM D 6307, or the nuclear method in accordance with ASTM D 4125, provided the nuclear gauge is calibrated for the specific mix being used. For the extraction method, the weight of ash, as described in ASTM D 2172, shall be determined as part of the first extraction test performed at the beginning of plant production; and as part of every tenth extraction test performed thereafter, for the duration of plant production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture.

3.10.3.2 Gradation

Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of recovered aggregate in accordance with ASTM D 5444. When asphalt content is determined by the nuclear method, aggregate gradation shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix plants. For batch plants, aggregates shall be tested in accordance with ASTM C 136 using actual batch weights to determine the combined aggregate gradation of the mixture.

3.10.3.3 Temperatures

Temperatures shall be checked at least four times per lot, at necessary locations, to determine the temperature at the dryer, the asphalt cement in the storage tank, the asphalt mixture at the plant, and the asphalt mixture at the job site.

3.10.3.4 Aggregate Moisture

The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

3.10.3.5 Moisture Content of Mixture

The moisture content of the mixture shall be determined at least once per lot in accordance with ASTM D 1461 or an approved alternate procedure.

3.10.3.6 Laboratory Air Voids, Marshall Stability and Flow

Mixture samples shall be taken at least four times per lot and compacted into specimens, using 75 blows per side with the Marshall hammer as described in ASTM D 1559. After compaction, the laboratory air voids of each specimen shall be determined, as well as the Marshall stability and flow.

3.10.3.7 In-Place Density

The Contractor shall conduct in-place density testing to ensure the specified density is achieved. A nuclear gauge may be used to monitor pavement density in accordance with ASTM D 2950. For determining in-place density, one random core will be taken by the Contractor from the mat (interior of the lane) of each subplot, and one random core will be taken from the joint (immediately over joint) of each subplot. Each random core will be full thickness of the layer being placed. When the random core is less than 1 inch thick, it will not be included in the analysis. In this case, another random core will be taken. After air drying to a constant weight, cores obtained from the mat and from the joints will be used for in-place density determination. Average in-place mat density per lot shall be between 97.9 and 100 percent of the average Marshall density, and the average in-place joint density shall be above 96.4 percent of the Marshall density. If the Maximum Specific Gravity for Class B mix is utilized, an in-place density range of 92.0 to 95.0 percent shall be attained for both mat and joints in accordance with AASHTO T 166.

3.10.3.8 Grade and Smoothness

3.11.7 Grade

The final wearing surface of pavement shall conform to the elevations and cross sections shown and shall vary not more than 0.05 foot from the plan grade established and approved at site of work. Finished surfaces at juncture with other pavements shall coincide with finished surfaces of abutting pavements. Deviation from the plan elevation will not be permitted in areas of pavements where closer conformance with planned elevation is required for the proper functioning of drainage and other appurtenant structures involved. The final wearing surface of the pavement will be tested for conformance with specified plan grade requirements. The grade will be determined by running lines of levels at intervals of 25 feet, or less, longitudinally and transversely, to determine the elevation of the completed pavement surface. Within 5 working days, after the completion of a particular lot incorporating the final wearing surface, the Contractor inform the Contracting Officer in writing, of the results of the grade-conformance tests. When more than 5 percent of all measurements made within a lot are outside the 0.05 foot tolerance, or where the grade exceeds the tolerance by more than 50 percent, the Contractor shall remove the surface lift full depth. The Contractor shall then replace the lift with hot-mix asphalt to meet specification requirements, at no additional cost to the Government. Diamond grinding may be used to remove high spots to meet grade requirements. Skin patching for correcting low areas or planing or milling for correcting high areas will not be permitted.

3.11.8 Surface Smoothness

All testing shall be performed in the presence of the Contracting Officer. Detailed notes of the results of the testing shall be kept and a copy furnished to the Government immediately after each day's testing. Where drawings show required deviations from a plane surface (crowns,

drainage inlets, etc.), the surface shall be finished to meet the approval of the Contracting Officer.

3.11.8.1 Smoothness Requirements

a. Straightedge Testing: The finished surfaces of the pavements shall have no abrupt change of 1/4 inch or more, and all pavements shall be within the tolerances specified below when checked with an approved 12 foot straightedge.

Straightedge Surface Smoothness--Pavements

<u>Pavement Category</u>	<u>Direction of Testing</u>	<u>Tolerance, inches</u>
All paved areas	Longitudinal	1/8
	Transverse	1/4

3.11.8.2 Testing Method

After the final rolling, but not later than 24 hours after placement, the surface of the pavement in each entire lot shall be tested by the Contractor in such a manner as to reveal all surface irregularities exceeding the tolerances specified above. Separate testing of individual sublots is not required. If any pavement areas are ground, these areas shall be retested immediately after grinding. The entire area of the pavement shall be tested in both a longitudinal and a transverse direction on parallel lines. The transverse lines shall be 25 feet or less apart, as directed. The longitudinal lines shall be at the centerline of each paving lane for lines less than 20 feet and at the third points for lanes 20 feet or greater. Other areas having obvious deviations shall also be tested. Longitudinal testing lines shall be continuous across all joints.

a. Straightedge Testing. The straightedge shall be held in contact with the surface and moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points.

3.11.8.3 Acceptance for Smoothness

a. Straightedge Testing. Location and deviation from straightedge for all measurements shall be recorded. When more than 5.0 percent of all measurements made within a lot exceed the tolerance specified in paragraph Smoothness Requirements above, after any reduction of high spots or removal and replacement, the lot shall be removed and replaced at no additional cost to the Government. Regardless of the above, any small individual area with surface deviation which exceeds the tolerance given above by more than 50 percent, shall be corrected by diamond grinding to meet the specification requirements above or shall be removed and replaced at no additional cost to the Government.

3.10.3.9 Additional Testing

Any additional testing, which the Contractor deems necessary to control the process, may be performed at the Contractor's option.

3.10.3.10 QC Monitoring

The Contractor shall submit all QC test results to the Contracting Officer on a daily basis as the tests are performed. The Contracting Officer reserves the right to monitor any of the Contractor's quality control testing and to perform duplicate testing as a check to the Contractor's quality control testing.

3.10.4 Sampling

When directed by the Contracting Officer, the Contractor shall sample and test any material which appears inconsistent with similar material being produced, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

3.10.5 Material Acceptance

All hot-mix asphalt pavements which do not meet the requirements specified herein, shall be removed and replaced, as directed by the Contracting Officers, at no additional cost to the Government.

END OF SECTION

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SECTION 02821

FENCING

Scope

This standard specifies requirements for chain-link fencing.

References

Chain-link fence shall meet the requirements of the latest revision of the following applicable national standards:

ASTM A121	- Standard Specification for Zinc-Coated (Galvanized) Steel Barbed Wire
ASTM A123	- Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153	- Standard Specification for Zinc-Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392	- Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A501	- Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM A641	- Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

Requirements

1. General

Fence shall be constructed to withstand a minimum 20 lb/sq ft wind load, and shall include all details necessary for a complete installation. Fence posts, braces, gates, and rails shall be fabricated of steel pipe in accordance with the latest revisions of ASTM A501. Steel pipe shall be galvanized in accordance with ASTM A123.

2. Extension Arms

Extension arms on intermediate posts shall be pressed steel, set at a 45 degree angle facing outward (unless otherwise specified on the plans), and shall carry three strands of barbed wire. Extension arms on corner posts shall be heavy malleable iron or pressed steel. Arms and barbed wire shall be capable of withstanding a downward pressure of at least 200 lbs.

3. Rails and Braces

Rails and braces shall be 1-1/4 in. standard (1.660 in. OD, weight 2.27 lbs/lin ft) or larger steel pipe.

4. Line Posts

4.1 Line posts shall be installed 36 in. deep in a concrete foundation of 12 in. minimum diameter. Concrete shall have a 2500 psi minimum 28 day compressive strength.

4.2 Seven foot high fence *without* slats shall be installed on line posts, spaced at 10 ft or less apart, which meet the following requirements:

2-1/2 in. standard steel pipe, 2.875 in. OD, weight 5.79 lbs/lin ft

5. Corner and Gate Posts

5.1 Corner and gate posts shall be installed 36 in. deep in a concrete foundation of 12 in. minimum diameter. Concrete shall have a 2500 psi minimum 28 day compressive strength. Posts shall be braced to permit the tensioning of fence fabric against them.

5.2 Seven Foot High Fence *without* slats

Corner posts shall be constructed of 2-1/2 in. standard (2.875 in. OD, weight 5.79 lbs/lin ft) or larger steel pipe with the exception that they shall be of a size equal to or greater than that of the line posts. Gate posts for gates less than 12 ft-0 in. wide shall be constructed of 3-1/2 in. standard (4.000 in. OD, weight 9.11 lbs/lin ft) or larger steel pipe. Gate posts for gates 12 ft wide and greater shall be 6 in. standard (6.625 in. OD, weight 18.97 lbs/lin ft) or larger steel pipe.

6. Gates

6.1 Gate frames shall be constructed of 1-1/2 in. standard (1.900 in. OD, weight 2.72 lbs/lin ft) or larger steel pipe and shall carry three strands of barbed wire. Corners shall be welded to form a rigid frame. Welds shall be cleaned after fabrication and the gate frame shall be galvanized. Gates shall be cross-braced with two diagonal truss rods to keep them rigid, and prevent sagging, buckling, and side weave. Hinges shall be industrial strength with 180 degree swing. Hinges shall be installed to allow the gates to swing into the substation yard only, and be fitted so that the gate cannot be lifted off them. Gates shall extend down to clear station grade by not more than 2 in., and shall be equal in height to the adjacent fence.

6.2 Double-swing gates shall have a center stop and out gate-keepers. Double gates shall be equipped with a center locking bar constructed of 1 in. steel pipe. Latches shall be installed so that one side of the double gate may be opened without lifting the center locking bar. The free gate shall be equipped with stops to prevent it from passing center when closed. Latches, stops, and brackets shall be constructed of 3/16 in. steel bar stock. Bolts holding latches and other locking hardware shall be peened to prevent removal of nuts. All parts shall be hot-dip galvanized after fabrication in accordance with latest revision of ASTM A153. Center locking bar, gate latch, gate stop, and other details necessary for locking gate-to-gate are shown in Figure 2 through Figure 7.

7. Fabric without Slats

Fabric shall be 9 gauge wire woven into 2 in. chain-link mesh, both edges of the fabric shall have a twisted and barbed finish. The fabric shall be zinc-coated in accordance with latest revision of ASTM A392, Class 2, 2 oz coating.

8. Barbed Wire

Barbed wire shall be composed of two 12-1/2 gauge wires, twisted with four point barbs spaced 5 in. apart, galvanized in accordance with latest revision of ASTM A121, Class 3, .80 oz zinc coating, or aluminum coated steel strands with aluminum barbs.

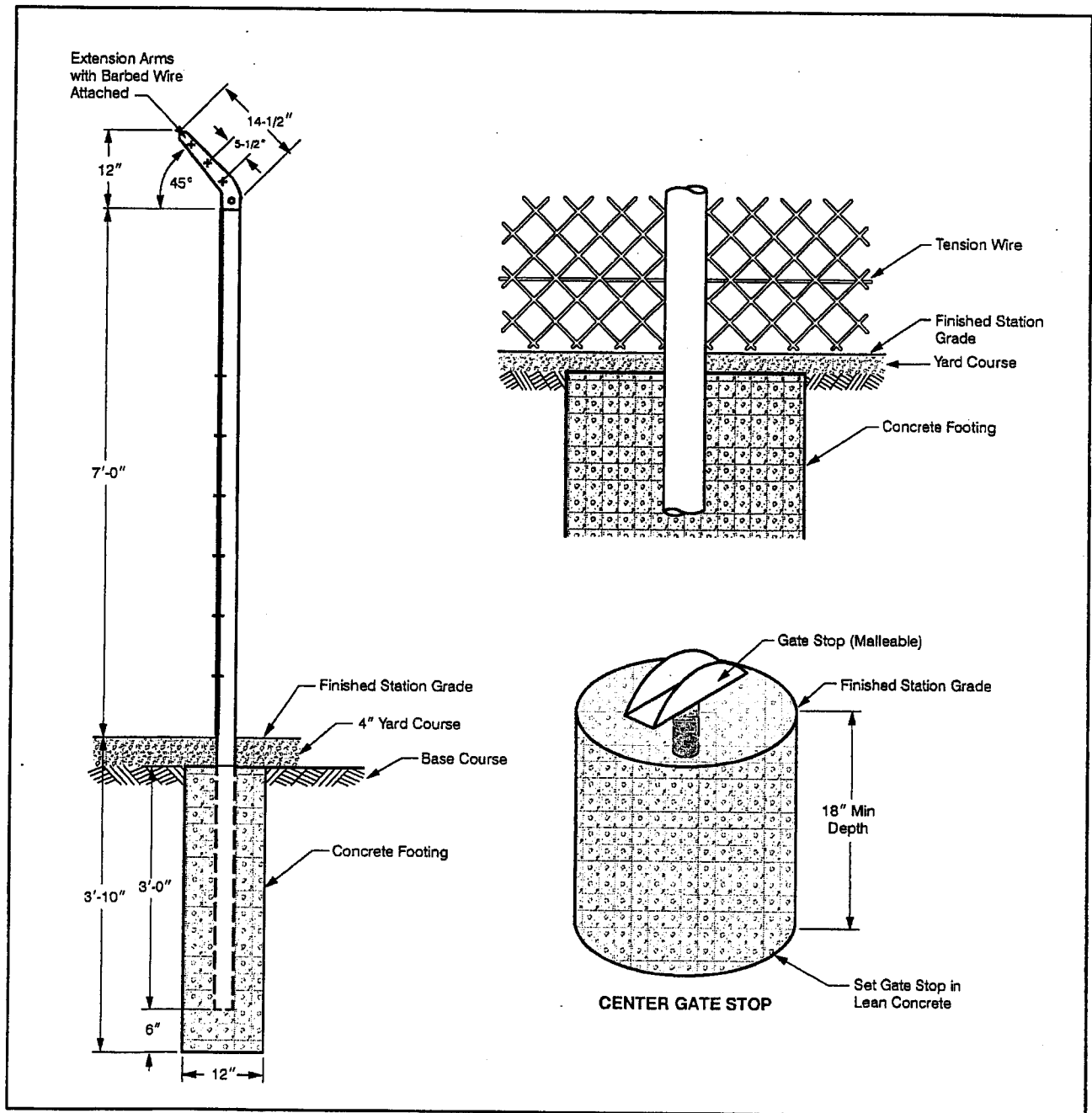


Figure 1 Fence and foundation

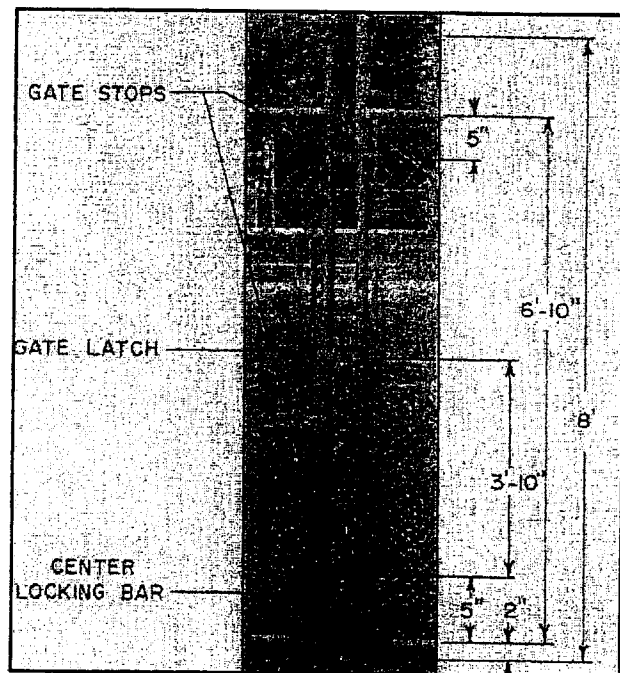


Figure 2 Gate latch detail

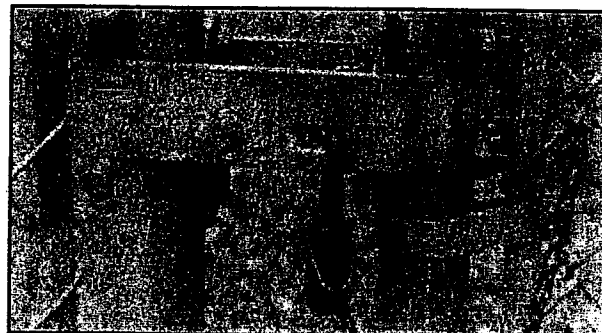


Figure 3 Gate latch locked

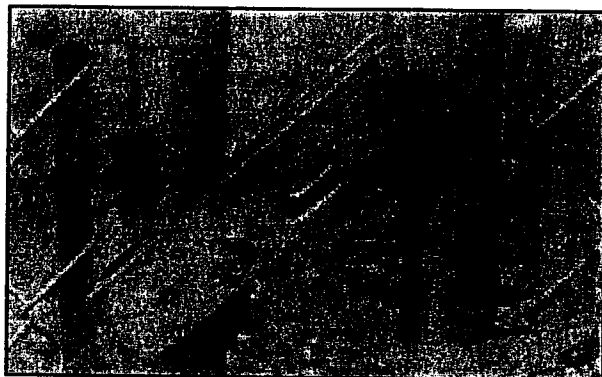


Figure 4 Gate latch lifted

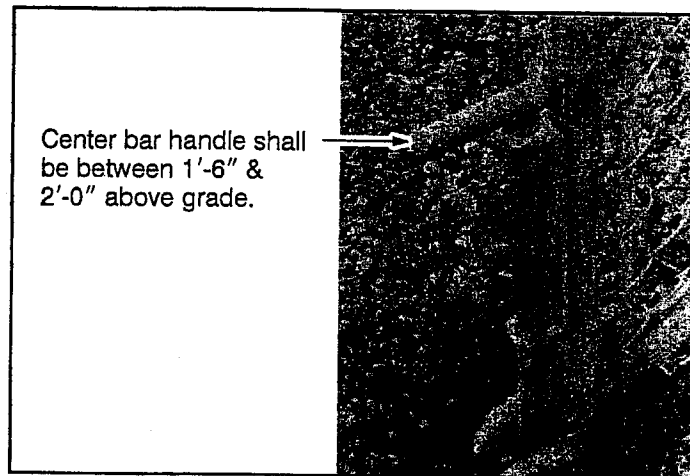


Figure 5 Center bar locked



Figure 7 Gate stop

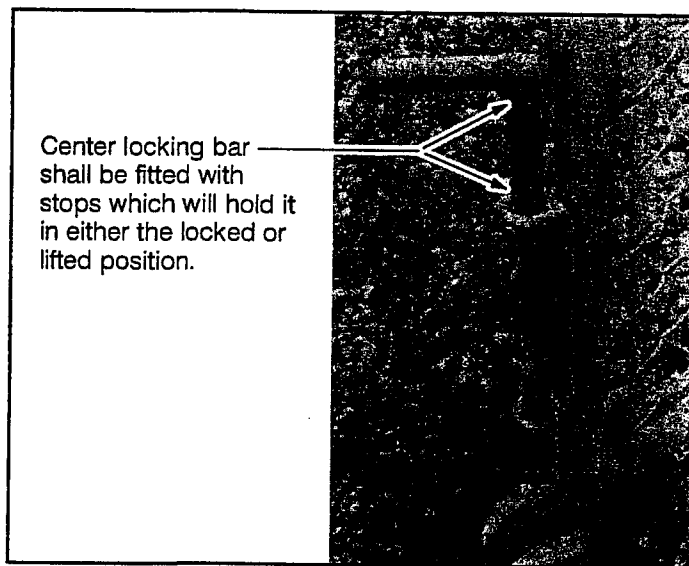


Figure 6 Center bar lifted

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SECTION 02921

SEEDING

1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Aug 95) Federal Seed Act Regulations Part 201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602 (1995a) Agricultural Liming Materials

ASTM D 977 (1991) Emulsified Asphalt

ASTM D 2028 (1976; R 1992) Cutback Asphalt (Rapid-Curing Type)

ASTM D 4972 (1995a) pH of Soils

ASTM D 5268 (1992; R 1996) Topsoil Used for Landscaping Purposes

ASTM D 5883 (1996) Standard Guide for Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Data

Equipment; FIO. Surface Erosion Control Material; FIO. Chemical Treatment Material; FIO.

Manufacturer's literature including physical characteristics, application and installation instructions for equipment, surface erosion control material and chemical treatment material.

Schedules

Equipment; FIO.

A listing of equipment to be used for the seeding operation.
Statements

Delivery; FIO.

Delivery schedule.

Finished Grade and Topsoil; GA.

Finished grade status.

Topsoil; GA.

Availability of topsoil from the stripping and stock piling operation.

Reports

Equipment Calibration; FIO.

Certification of calibration tests conducted on the equipment used in the seeding operation.

Soil Test; FIO.

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

Certificates

Seed; FIO. Topsoil; FIO. Organic Material; FIO. Mulch; FIO.

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

- a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.
- b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.
- d. Organic Material: Composition and source.
- e. Mulch: Composition and source.

Samples

Delivered Topsoil; FIO.

Samples taken from several locations at the source.

Soil Amendments; FIO.

Manufacturers literature.

Mulch; FIO.

Manufacturers literature.

Records

Quantity Check; FIO.

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Seed Establishment Period; G.

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; G.

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

1.3 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.4.1.1 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil delivered to the site.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in designated areas. Seed shall be stored in cool, dry locations away from contaminants.

1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.4.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

Permanent seed species and mixtures shall be proportioned by weight as follows:

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
FIELD SEED			
<i>Alopecurus pratensis</i>	Meadow Foxtail	23.6	18.9 (min)
<i>Festuca</i>	Red Fescue	14.2	13.9 (min)

rubra

Trifolium Repens (pre-inoculated)	White Dutch Clover	9.4	9.1 (min)
Calamagrotis canadensis	Blujoint Bentgrass	52.8	52.3

2.1.3 Temporary Seed Species

Temporary seed species for surface erosion control or overseeding shall be as follows:

Botanical Name	Common Name	Percent Pure Live Seed
Agrostis idahoensis	Idaho Bentgrass	25%
Festuca ovina	Sheep Fescue	25%
Lolium multiflorum	Annual Ryegrass	25%
Trifolium incarnatum	Crimson Clover	25%

2.1.4 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.1.5 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as directed.

2.1.6 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite in accordance with Section 02300 EARTHWORK. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the seed specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts. Minimum topsoil thickness shall be 4-inch.

2.2.1 Fertilizer

No fertilizer can be used on this site due to its proximity to waterways.

2.2.2 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

2.2.2.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

2.2.2.2 Rotted Manure

Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

2.2.2.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.3 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.3.1 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.4 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS

3.1.1 Seeding Time

Seed shall be sown anytime that seeding conditions are met.

3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

3.1.4 Soil Test

Delivered topsoil, existing soil in smooth graded areas, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

3.2 SITE PREPARATION

3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the seeding operation.

3.2.2 Tillage

Soil on slopes up to a maximum 3-horizontal-to-1-vertical shall be tilled to a minimum 4 inch depth. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum 2 inch depth by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required. Drainage patterns shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements.

3.2.3 Prepared Surface

3.2.3.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.2.3.2 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.1 Installing Seed

Seeding method shall be Hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer.

3.3.2 Hydroseeding

Seed shall be mixed to ensure broadcast at the rate of 175 pounds per acre. Seed shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates recommended by the manufacturer after the seed and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.3 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.3.4 Temporary Seeding

When directed during contract delays affecting the seeding operation or when a quick cover is required to prevent surface erosion, the areas designated shall be seeded in accordance with temporary seed species listed under Paragraph SEED.

3.3.4.1 Soil Amendments

When soil amendments have not been applied to the area, the quantity of 1/2 of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. The area shall be watered in accordance with paragraph Watering Seed.

3.3.4.2 Remaining Soil Amendments

The remaining soil amendments shall be applied in accordance with the paragraph Tillage when the surface is prepared for installing seed.

3.4 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.5 RESTORATION AND CLEAN UP

3.5.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.5.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

3.6 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

3.7 SEED ESTABLISHMENT PERIOD

3.7.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of work under this contract and shall end 3 months after the last day of the seeding operation. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be coordinated with 02930 EXTERIOR PLANTING. The seed establishment period

shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

3.7.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high.

3.7.2.1 Field Area

A satisfactory stand of grass plants from the seeding operation for a field area shall be a minimum 20 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

3.7.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; watering.

3.7.3.1 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.7.3.2 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

END OF SECTION

SECTION 02930

EXTERIOR PLANTING

1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)

ANLA ANSI/ANLA Z60.1 (1996) American Standard for Nursery Stock

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A300 (1995) Tree Care Operations - Trees, Shrubs and other
Woody Plant Maintenance

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602 (1995a) Agricultural Liming Materials

ASTM D 4972 (1995a) pH of Soils

ASTM D 5034 (1995) Breaking Strength and Elongation of Textile
Fabrics (Grab Test)

ASTM D 5035 (1995) Breaking Strength and Elongation of Textile
Fabrics (Grab Test)

ASTM D 5268 (1992; R1996) Topsoil Used for Landscaping Purposes

ASTM D 5883 (1996) Standard Guide for Use of Rotary Kiln Produced
Expanded Shale, Clay or Slate (ESCS) as a Mineral
Amendment in Topsoil Used for Landscaping and
Related Purposes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Data

Weed Barrier Fabric; FIO. Chemical Treatment Material; FIO.

Manufacturer's literature including physical characteristics, application and installation instructions for weed barrier fabric and chemical treatment material.

Schedules

Equipment; FIO.

A listing of equipment to be used for the planting operation.

Statements

Delivery; FIO.

Delivery schedule.

Finished Grade, Topsoil and Underground Utilities; FIO.

Finished grade status; location of underground utilities and facilities; and availability of topsoil from the stripping and stock piling operation.

Reports

Soil Test; FIO.

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

Certificates

Plant Material; GA. Topsoil; FIO. pH Adjuster; FIO. Fertilizer; FIO. Organic Material; FIO. Organic Mulch; FIO. Pesticide; FIO.

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

- a. Plant Material: Classification, botanical name, common name, size, quantity by species, and location where grown.
- b. Topsoil: Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.
- e. Organic Material: Composition and source.
- g. Organic Mulch: Composition, source, and treatment against fungi growth.

Samples

Delivered Topsoil; FIO.

Samples taken from several locations at the source.
Mulch; FIO.

Manufacturers literature.

Records

Plant Establishment Period; G.

Calendar time period for the plant establishment period. When there is more than one establishment period, the boundaries of the planted areas covered for each period shall be described.

Maintenance Record; FIO.

Maintenance work performed, quantity of plant losses, and replacements; and diagnosis of unhealthy plant material.

Operation and Maintenance Manuals

Maintenance Instructions; FIO.

Instruction for year-round care of installed plant material.

1.3 SOURCE INSPECTIONS

The nursery or source of plant material and the source of delivered topsoil shall be subject to inspection.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 working days prior to the first day of delivery.

1.4.1.1 Plant Material Identification

Plant material shall be identified with attached, durable, waterproof labels and weather-resistant ink, stating the correct botanical and common plant name and size.

1.4.1.2 Protection During Delivery

Plant material shall be protected during delivery to prevent desiccation and damage to the branches, trunk, root system, or earth ball. Branches shall be protected by tying-in. Exposed branches shall be covered during transport.

1.4.1.3 Delivered Topsoil

Prior to the delivery of any topsoil, the availability of topsoil shall be verified in paragraph TOPSOIL. A soil test shall be provided for delivered topsoil.

1.4.2 Inspection

Plant material shall be well shaped, vigorous and healthy with a healthy, well-branched root system, free from disease, harmful insects and insect eggs, sunscald injury, disfigurement or abrasion. Plant material shall be checked for unauthorized substitution and to establish nursery-grown status. Plant material showing desiccation, abrasion, sunscald injury, disfigurement, or unauthorized substitution shall be rejected. The plant material shall exhibit typical form of branch to height ratio; and meet the caliper and height measurements specified. Plant material that measures less than specified, or has been poled, topped off or headed back, shall be rejected. Container-grown plant material shall show new fibrous roots and the root mass shall contain its shape when removed from the container. Plant material with broken or cracked balls; or broken containers shall be rejected. Bare-root plant material that is not dormant or is showing roots were pulled from the ground shall be rejected. Other materials shall be inspected for compliance with paragraph PRODUCTS. Open soil amendment containers or wet soil amendments shall be rejected. Topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material larger than 1-1/2 inch diameter shall be rejected. Topsoil that contains viable plant material and plant parts shall be rejected. Unacceptable material shall be removed from the job site.

1.4.3 Storage

1.4.3.1 Plant Material Storage

Plant material not installed on the day of arrival at the site shall be stored and protected in designated areas and approved by the Contracting Officer. Plant material shall not be stored longer than 30 days. Plant material shall be protected from direct exposure to wind and sun. Bare-root plant material shall be heeled-in. All plant material shall be kept in a moist condition by watering with a fine mist spray until installed.

1.4.3.2 Other Material Storage

Storage of other material shall be in designated areas approved by Contracting Officer. Soil amendments shall be stored in dry locations and away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with planting operation material.

1.4.4 Handling

Plant material shall not be injured in handling. Cracking or breaking the earth ball of balled and burlapped plant material shall be avoided. Plant material shall not be handled by the trunk or stems. Materials shall not be dropped from vehicles.

1.4.5 Time Limitation

Except for container-grown plant material, the time limitation from digging to installing plant material shall be a maximum 15 days. The time limitation between installing the plant material and placing the mulch shall be a maximum 24 hours.

1.5 WARRANTY

Furnished plant material shall have a warranty for plant growth to be in a vigorous growing condition for a minimum 12-month period from installation date. A minimum 12-month calendar time period for the warranty of plant growth shall be provided regardless of the contract time period. When plant material is determined to be unhealthy in accordance with paragraph PLANT ESTABLISHMENT PERIOD, it shall be replaced once under this warranty.

2 PRODUCTS

2.1 PLANT MATERIAL

2.1.1 Plant Material Classification

The plant material shall be nursery grown stock conforming to ANLA ANSI/ANLA Z60.1 and shall be the species specified.

2.1.2 Plant Schedule

The plant schedule shall provide botanical names as included in one or more of the publications listed under "Nomenclature" in ANLA ANSI/ANLA Z60.1.

2.1.3 Substitutions

Substitutions will not be permitted without written request and approval from the Contracting Officer.

2.1.4 Quality

Well-shaped, well-grown, vigorous plant material having healthy and well-branched root systems in accordance with ANLA ANSI/ANLA Z60.1 shall be provided. Plant material shall be provided free from disease, harmful insects and insect eggs, sunscald injury, disfigurement and abrasion. Plant material shall be free of shock or damage to branches, trunk, or root systems, which may occur from the digging and preparation for shipment, method of shipment, or shipment. Plant quality is determined by the growing conditions; method of shipment to maintain health of the root system; and growth of the trunk and crown as follows.

2.1.5 Growing Conditions

Plant material shall be native to or well suited to the growing conditions of the project site. Plant material shall be grown under climatic conditions similar to those at the project site.

2.1.6 Method of Shipment to Maintain Health of Root System

2.1.6.1 Container-Grown (C) Plant Material

Container size shall be in accordance with ANLA ANSI/ANLA Z60.1. Plant material shall be grown in a container over a duration of time for new fibrous roots to have developed and for the root mass to retain its shape and hold together when removed from the container.

Container-grown plant material shall be inoculated with mycorrhizal fungi during germination

in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. The container shall be sufficiently rigid to hold ball shape and protect root mass during shipping.

2.1.7 Growth of Trunk and Crown

2.1.7.1 Deciduous Trees

A height to caliper relationship shall be provided in accordance with ANLA ANSI/ANLA Z60.1. Height of branching shall bear a relationship to the size and species of tree specified and with the crown in good balance with the trunk. The trees shall not be "poled" or the leader removed.

- a. Single stem: The trunk shall be straight and symmetrical with crown and have a persistent main leader.
- b. Multi-stem: All countable stems, in aggregate, shall average the size specified. To be considered a stem, there shall be no division of the trunk that branches more than 6 inches from ground level.
- c. Specimen: The tree provided shall be well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.

2.1.7.2 Deciduous Shrubs

Deciduous shrubs shall have the height and number of primary stems recommended by ANLA ANSI/ANLA Z60.1. Acceptable plant material shall be well shaped, with sufficient well-spaced side branches, and recognized by the trade as typical for the species grown in the region of the project.

2.1.7.3 Coniferous Evergreen Plant Material

Coniferous Evergreen plant material shall have the height-to-spread ratio recommended by ANLA ANSI/ANLA Z60.1. The coniferous evergreen trees shall not be "poled" or the leader removed. Acceptable plant material shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated.

2.1.7.4 Broadleaf Evergreen Plant Material

Broadleaf evergreen plant material shall have the height-to-spread ratio recommended by ANLA ANSI/ANLA Z60.1. Acceptable plant material shall be well shaped and recognized by the trade as typical for the variety grown in the region of the project.

2.1.7.5 Ground Cover and Vine Plant Material

Ground cover and vine plant material shall have the minimum number of runners and length of runner recommended by ANLA ANSI/ANLA Z60.1. Plant material shall have heavy, well-developed and balanced crown with vigorous, well-developed root system and shall be furnished in containers.

2.1.8 Plant Material Size

Plant material shall be furnished in sizes indicated. Plant material larger in size than specified may be provided at no additional cost to the Government.

2.1.9 Plant Material Measurement

Plant material measurements shall be in accordance with ANLA ANSI/ANLA Z60.1.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. Topsoil shall be delivered and amended as recommended by the soil test for the plant material specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts. Minimum topsoil thickness shall be 4-inch.

2.3 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.3.1 Organic Mulch

Organic mulch materials shall be ground or shredded fir or hemlock bark, wood chips, 1/2" to 1" in size.

2.4 WOOD STAKING MATERIAL

Wood stakes shall be hardwood or fir; rough sawn; free from knots, rot, cross grain, or other defects that would impair their strength.

2.4.1 Bracing Stake

Wood bracing stakes shall be a minimum 2 x 2-inch square and a minimum 8 feet long with a point at one end. Stake shall be set without damaging rootball.

2.4.2 Wood Ground Stakes

Wood ground stakes shall be a minimum of 2 x 2 inch square and a minimum 3 feet long with a point at one end.

2.4.3 Deadmen

Wood deadmen shall be a minimum 4 x 4 x 36 inches long.

2.4.4 Guying Material

Metal guying material shall be a minimum 12-gauge wire. Multi-strand cable shall be woven wire. Guying material tensile strength shall conform to the size of tree to be held firmly in place.

2.4.5 Turnbuckle

Metal turnbuckles shall be galvanized or cadmium-plated steel, and shall be a minimum 3 inches long with closed screw eyes on each end. Screw thread tensile strength shall conform to the size of tree to be held firmly in place.

2.4.6 Chafing Guard

Plastic chafing guards shall be used to protect tree trunks and branches when metal is used as guying material. The material shall be the same color throughout the project site. Length shall be a minimum 1.5 times the circumference of the plant trunk at its base.

2.5 RUBBER GUYING MATERIAL

Rubber chafing guards, consisting of recycled material, shall be used to protect tree trunks and branches when metal guying material is applied. The material shall be the same color throughout the project. Length shall be a minimum 1.5 times the circumference of the plant trunk at its base.

2.6 MYCORRHIZAL FUNGI INOCULUM

Mycorrhizal fungi inoculum shall be composed of multiple-fungus inoculum as recommended by the manufacturer for the plant material specified.

2.7 WATER

A suitable water source from the City of Snoqualmie municipal water supply will be available at the project site. The source will have a quick-connect. The water line will be installed by others promptly after excavation at the site is complete. Any requirement for water prior to the waterline installation shall be the responsibility of the Contractor. Water provided by the Contractor shall not contain elements toxic to plant life.

3 EXECUTION

3.1 INSTALLING PLANT MATERIAL TIME AND CONDITIONS

3.1.1 Plant Material Time

Plant material shall be installed from October to January.

3.1.2 Plant Material Conditions

Planting operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the planting operations, proposed planting times shall be submitted for approval.

3.1.3 Tests

3.1.3.1 Soil Test

Delivered topsoil, excavated plant pit soil, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection onsite shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the plant material specified.

3.2 SITE PREPARATION

3.2.1 Finished Grade, Topsoil and Underground Utilities

The Contractor shall verify that finished grades are as indicated on drawings, and that the placing of topsoil, the smooth grading, and the compaction requirements have been completed in accordance with Section 02300 EARTHWORK and Section 02921 SEEDING, prior to the commencement of the planting operation. The location of underground utilities and facilities in the area of the planting operation shall be verified. Damage to underground utilities and facilities shall be repaired at the Contractor's expense.

3.2.2 Layout

Plant material locations and bed outlines shall be staked on the project site before any excavation is made. Plant material locations may be adjusted to meet field conditions as determined by the Contracting Officer.

3.2.3 Protecting Existing Vegetation

When there are established lawns in the planting area, the turf shall be covered and/or protected during planting operations. Existing trees, shrubs, and plant beds that are to be preserved shall be barricaded along the dripline to protect them during planting operations.

3.3 EXCAVATION

3.3.1 Obstructions Below Ground

When obstructions below ground affect the work, shop drawings showing proposed adjustments to plant material location, type of plant and planting method shall be submitted for approval.

3.3.2 Plant Pits

Plant pits for container plant material shall be dug to a depth equal to the height of the root ball as measured from the base of the ball to the base of the plant trunk. Plant pits shall be dug a minimum 50 percent wider than the ball or root system to allow for root expansion. The pit shall be constructed with sides sloping towards the base as a cone, to encourage well-

aerated soil to be available to the root system for favorable root growth. Cylindrical pits with vertical sides shall not be used. Pit sides will be scarified to prevent glazing.

3.4 INSTALLATION

3.4.1 Setting Plant Material

Plant material shall be set plumb and held in position until sufficient soil has been firmly placed around root system or ball. In relation to the surrounding grade, the plant material shall be set even with the grade at which it was grown.

3.4.2 Backfill Soil Mixture

The backfill soil mixture shall be a mix of 1 part imported topsoil and 1 part existing excavated soil.

3.4.3 Backfill Procedure

Prior to backfilling, all metal, wood, synthetic products, or treated burlap devices shall be removed from the ball or root system avoiding damage to the root system. The backfill procedure shall remove air pockets from around the root system. Additional requirements are as follows.

3.4.3.1 Container-Grown

The plant material shall be carefully removed from containers that are not biodegradable. Prior to setting the plant in the pit, a maximum 1/4 depth of the root mass, measured from the bottom, shall be spread apart to promote new root growth. For plant material in biodegradable containers the container shall be split prior to setting the plant with container. Backfill mixture shall be added to the plant pit in 6-inch layers with each layer tamped. Fertilizer shall be applied at the rate recommended by the manufacturer.

3.4.3.2 Earth Berm

An earth berm, consisting of backfill soil mixture, shall be formed with a minimum 4-inch height 2' our from the plant to aid in water retention and to provide soil for settling adjustments.

3.4.4 Plant Bed

Plant material shall be set in plant beds according to the drawings. Backfill soil mixture shall be placed on previously scarified subsoil to completely surround the root balls, and shall be brought to a smooth and even surface, blending to existing areas. Earth berms shall be provided around individual shrubs and ground cover areas..

3.4.5 Watering

Plant pits and plant beds shall be watered immediately after backfilling, until completely saturated.

3.4.6 Staking and Guying

Staking will be required when trees are unstable or will not remain set due to their size, shape, or exposure to high wind velocity.

3.4.6.1 One Bracing Stake

Trees 4 to 6 feet high shall be firmly anchored in place with one bracing stake. The bracing stake shall be placed on the side of the tree facing the prevailing wind. The bracing stake shall be driven vertically into firm ground and shall not injure the ball or root system. The tree shall be held firmly to the stake with a double strand of guying material. The guying material shall be firmly anchored at a minimum 1/2-tree height and shall prevent girdling. A chafing guard shall be used when metal is the guying material.

3.4.6.2 Two Bracing Stakes

Trees from 6 to 8 feet height shall be firmly anchored in place with 2 bracing stakes placed on opposite sides. Bracing stakes shall be driven vertically into firm ground and shall not injure the ball or root system. The tree shall be held firmly between the stakes with a double strand of guying material. The guying material shall be firmly anchored at a minimum 1/2-tree height and shall prevent girdling. Chafing guards shall be used when metal is the guying material.

3.5 FINISHING

3.5.1 Plant Material

Prior to placing mulch, the installed area shall be uniformly edged to provide a clear division line between the planted area and the adjacent turf area, shaped as indicated. The installed area shall be raked and smoothed while maintaining the earth berms.

3.5.2 Placing Mulch

The placement of mulch shall occur a maximum 48 hours after planting. Mulch, used to reduce soil water loss, regulate soil temperature and prevent weed growth, shall be spread to cover the installed area with a minimum 3-inch uniform thickness. Mulch shall be kept out of the crowns of shrubs to a distance of 4"-6", ground cover, and vines and shall be kept off buildings, sidewalks and other facilities.

3.5.3 Pruning

Trained and experienced personnel shall accomplish pruning. The pruning of trees and palms shall be in accordance with ANSI A300. Only dead or broken material shall be pruned from installed plants. The typical growth habit of individual plant material shall be retained. Clean cuts shall be made flush with the parent trunk. Improper cuts, stubs, dead and broken branches shall be removed. "Headback" cuts at right angles to the line of growth will not be permitted. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off".

3.6 MAINTENANCE DURING PLANTING OPERATION

Installed plant material shall be maintained in a healthy growing condition. Maintenance operations shall begin immediately after each plant is installed to prevent desiccation and shall continue until the plant establishment period commences. Installed areas shall be kept free of weeds, grass, and other undesired vegetation. The maintenance includes maintaining the mulch, watering, and adjusting settling.

3.7 RESTORATION AND CLEAN UP

3.7.1 Restoration

Turf areas, pavements, facilities and any other existing vegetation that have been damaged from the planting operation shall be restored to original condition at the Contractor's expense.

3.7.2 Clean Up

Excess and waste material shall be removed from the installed area and shall be disposed offsite. Adjacent paved areas shall be cleared.

3.8 PLANT ESTABLISHMENT PERIOD

3.8.1 Commencement

Upon completion of the last day of the planting operation, the plant establishment period for maintaining installed plant material in a healthy growing condition shall commence and shall be in effect for the remaining contract time period, not to exceed 12 months. Written calendar time period shall be furnished for the plant establishment period. When there is more than one plant establishment period, the boundaries of the planted area covered for each period shall be described. The plant establishment period shall be coordinated with Section 02935 TURF. The plant establishment period shall be modified for inclement weather shut down periods, or for separate completion dates for areas.

3.8.2 Maintenance During Establishment Period

Maintenance of plant material shall include straightening plant material, straightening stakes; tightening guying material; correcting girdling; supplementing mulch; pruning dead or broken branch tips; maintaining plant material labels; watering; eradicating weeds, insects and disease; post-fertilization; and removing and replacing unhealthy plants. Tree staking material to be taken out during last month of maintenance period.

3.8.2.1 Watering Plant Material

The plant material shall be watered as necessary to prevent desiccation and to maintain an adequate supply of moisture within the root zone. An adequate supply of moisture is estimated to be the equivalent of 1 inch absorbed water per week, delivered in the form of rain or augmented by watering. Run-off, puddling and wilting shall be prevented. Unless otherwise directed, watering trucks shall not be driven over turf areas..

3.8.2.2 Weeding

Grass and weeds in the installed areas shall not be allowed to reach a maximum 3 inches height before being completely removed, including the root system.

3.8.2.3 Plant Pit Settling

When settling occurs to the backfill soil mixture, additional backfill soil shall be added to the plant pit or plant bed until the backfill level is equal to the surrounding grade. Serious settling that affects the setting of the plant in relation to the maximum depth at which it was grown requires replanting in accordance with paragraph INSTALLATION. The earth berm shall be maintained.

3.8.2.4 Maintenance Record

A record shall be furnished describing the maintenance work performed, the quantity of plant losses, diagnosis of the plant loss, and the quantity of replacements made on each site visit.

3.8.3 Unhealthy Plant Material

A tree shall be considered unhealthy or dead when the main leader has died back, or up to a maximum 25 percent of the crown has died. A shrub shall be considered unhealthy or dead when up to a maximum 25 percent of the plant has died. This condition shall be determined by scraping on a branch an area 1/16 inch square, maximum, to determine if there is a green cambium layer below the bark. The Contractor shall determine the cause for unhealthy plant material and shall provide recommendations for replacement. Unhealthy or dead plant material shall be removed immediately and shall be replaced as soon as seasonal conditions permit.

3.8.4 Replacement Plant Material

Unless otherwise directed, plant material shall be provided for replacement in accordance with paragraph PLANT MATERIAL. Replacement plant material shall be installed in accordance with paragraph INSTALLATION, and recommendations in paragraph PLANT ESTABLISHMENT PERIOD. Plant material shall be replaced in accordance with paragraph WARRANTY. An extended plant establishment period shall not be required for replacement plant material.

3.8.5 Maintenance Instructions

Written instructions shall be furnished containing drawings and other necessary information for year-round care of the installed plant material; including, when and where maintenance should occur, and the procedures for plant material replacement.

END OF SECTION

APPENDIX A
PLANTING PLAN
CONSTRUCTION STAGING AREA



Planning Department (425) 888-5337

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P.O. Box 987

Snoqualmie, Washington 98065

January 30, 2003

Conceptual Restoration Plan - Corps 205 Construction Staging Area

The following represents the City of Snoqualmie's Conceptual Restoration Plan for the Construction Staging Area for the Army Corps of Engineers Section 205 Project in Snoqualmie.

The Construction staging area, illustrated on the attached map, includes a total of 69,947 square feet in a Temporary Work Area Easement granted by the City of Snoqualmie, the property owner. The site is currently characterized by a gravel parking area with light poles and fixtures. Extensive Himalayan Blackberry and English ivy grows at the west perimeter of the site. Numerous young alder saplings, approximately 10-20 feet tall, grow at the east and south perimeters of the site. Maintaining the young alder forest area intact leaves approximately 67,000 square feet of the site in need of re-vegetation.

Upon completion of the use of the site for a Construction Staging Area for the Corp 205 project, the following actions will be implemented for restoration of the site to a natural, forested condition.

1. Removal of Invasive Species:

All invasive species found within the project site, and at the perimeters surrounding the immediate site, will be removed. Invasive species present at the site to be removed include Himalayan blackberry and English ivy. Removal will include cutting away vegetation and digging up rootballs. The large stump covered in English ivy directly to the west of the site will also be stripped of the ivy to prevent seeding of the site.

Areas of the site containing extensive cover of the young alders will be maintained, with the exception of hand-removal of invasive species within these areas.

2. Site and Soil Preparation:

The existing parking lot light fixtures, poles, and wires will be removed from the site, as well as any debris, such as the existing concrete chunks and railroad ties. Upon removal of utilities and debris, the top layer of crushed gravel will be removed from the site, and the earth tilled to loosen the soil. A layer of topsoil, a minimum of 1 foot thick, will be placed over the native soil to aid in planting.

3. Tree Plantings:

Tree plantings will consist of approximately 70% evergreen species and 30% deciduous species. Trees will be spaced at an average of 10 feet apart, and will be planted in an irregular spacing pattern for natural appearance. Given 10-foot spacing, approximately 670 trees will be required to cover the disturbed portions of the site, consisting of 470 evergreen trees and 200 deciduous trees. Tree saplings will be used to ensure greater likelihood of survival and ease of replacement of dead species.

Evergreen trees will consist of Douglas fir (*Pseudotsuga menziesii*), Western hemlock (*Tsuga heterophylla*), and Western red cedar (*Thuja plicata*).

Deciduous trees will consist of big leaf maple (*Acer macrophyllum*), vine maple (*Acer circinatum*), and red alder (*Alnus rubra*).

4. Shrub Plantings:

Groupings of shrubs will be included in the restoration, to provide added species variety and habitat functions. Shrub plantings of like species will be grouped in clusters for more successful pollination and propagation. Approximately 700 shrubs will be required to cover the disturbed portions of the site.

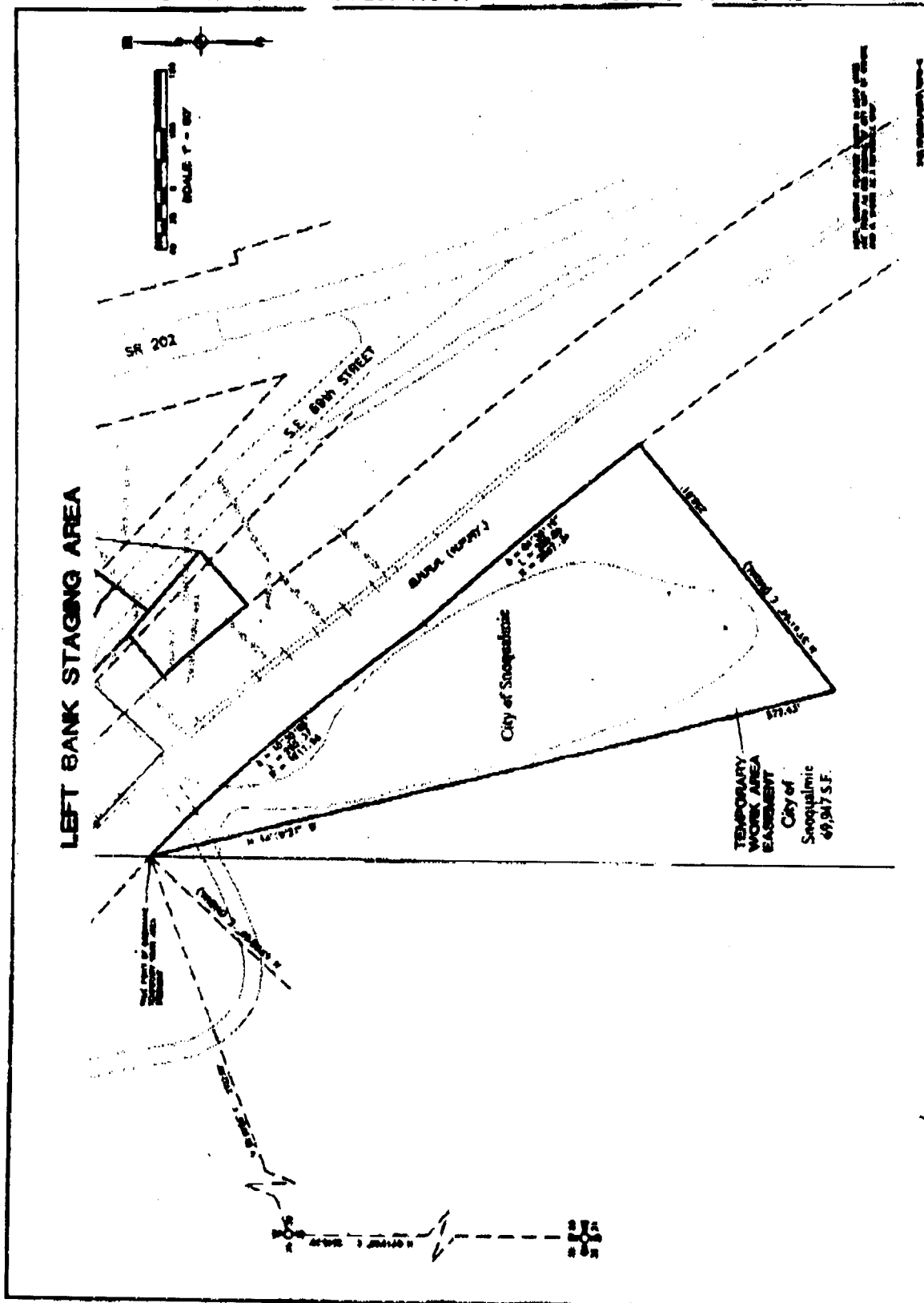
Shrubs will consist of Red-Osier Dogwood (*Cornus stolonifera*), Ocean Spray (*Holodiscus discolor*), Snowberry (*Symphoricarpos alba*), Western Serviceberry (*Amelanchier alnifolia*), Wild Mock Orange (*Philadelphus lewisii*), Thimbleberry (*Rubus parviflorus*), Salmonberry (*Rubus spectabilis*), and Salal (*Gaultheria shallon*).

5. Groundcover:

Upon completion of the plantings, the remaining ground surface will be covered with Mulch or hydroseeding of native seed mix to prevent establishment of weeds and invasive species.

6. Monitoring and Maintenance:

Upon restoration, the site will be provided maintenance for a period of 5 years to ensure proper establishment and survival. Maintenance will include watering during the dry season for the first year, replacement of dead species, and control of exotic weeds and invasive species.



PREPARED FOR CITY OF SNOQUALMIE
 FOR CORPS OF ENGINEERS
 SNOQUALMIE SECTION 205

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SECTION 03307

CONCRETE FOR MINOR STRUCTURES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

ACI 308 (1992; R 1997) Standard Practice for Curing Concrete

ACI 318/318R (1999) Building Code Requirements for Structural Concrete and Commentary

ACI 318M (1995) Metric Building Code Requirements for Structural Concrete and Commentary

ACI 347R (1994; R 1999) Guide to Formwork for Concrete

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 185 (1997) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement

ASTM A 615/A 615M (2000) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

ASTM C 143/C 143M (2000) Slump of Hydraulic Cement Concrete

ASTM C 150 (1999a) Portland Cement

ASTM C 171 (1997a) Sheet Materials for Curing Concrete

ASTM C 172 (1999) Sampling Freshly Mixed Concrete

ASTM C 231 (1997e1) Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C 260 (2000) Air-Entraining Admixtures for Concrete

ASTM C 309 (1998a) Liquid Membrane-Forming Compounds for Curing Concrete

ASTM C 31/C 31M (2000e1) Making and Curing Concrete Test Specimens in the Field

ASTM C 33	(1999ae1) Concrete Aggregates
ASTM C 39/C 39M	(2001) Compressive Strength of Cylindrical Concrete Specimens
ASTM C 494/C 494M	(1999ae1) Chemical Admixtures for Concrete
ASTM C 595	(2000a) Blended Hydraulic Cements
ASTM C 595M	(1997) Blended Hydraulic Cements (Metric)
ASTM C 618	(2000) Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C 685	(2000) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C 920	(1998) Elastomeric Joint Sealants
ASTM C 94/C 94M	(2000e2) Ready-Mixed Concrete
ASTM D 1752	(1984; R 1996el) Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
ASTM D 75	(1987; R 1997) Sampling Aggregates
ASTM D 98	(1998) Calcium Chloride
ASTM E 96	(2000) Water Vapor Transmission of Materials
U.S. ARMY CORPS OF ENGINEERS (USACE)	
COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

- Air-Entraining Admixture; G
- Accelerating Admixture; G
- Water-Reducing or Retarding Admixture;
- Curing Materials; G
- Reinforcing Steel; G
- Expansion Joint Filler Strips, Premolded;

Joint Sealants - Field Molded Sealants;

Manufacturer's literature is available from suppliers which demonstrates compliance with applicable specifications for the above materials.

Batching and Mixing Equipment;

Batching and mixing equipment will be accepted on the basis of manufacturer's data which demonstrates compliance with the applicable specifications.

Conveying and Placing Concrete;

The methods and equipment for transporting, handling, depositing, and consolidating the concrete shall be submitted prior to the first concrete placement.

Formwork; G

Formwork design shall be submitted prior to the first concrete placement.

SD-06 Test Reports

Aggregates;

Aggregates will be accepted on the basis of certificates of compliance and test reports that show the material(s) meets the quality and grading requirements of the specifications under which it is furnished.

Concrete Mixture Proportions; G

Ten days prior to placement of concrete, the contractor shall submit the mixture proportions that will produce concrete of the quality required. Applicable test reports shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

SD-07 Certificates

Cementitious Materials;

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted in accordance with the Special Clause "CERTIFICATES OF COMPLIANCE". Cementitious material will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by mill test reports that the material(s) meet the requirements of the specification under which it is furnished.

Aggregates;

Aggregates will be accepted on the basis of certificates of compliance and tests reports that show the material(s) meet the quality and grading requirements of the specifications under which it is furnished.

1.3 DESIGN AND PERFORMANCE REQUIREMENTS

The Government will maintain the option to sample and test joint sealer, joint filler material aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary to assist the Government in procurement of representative test samples. Samples of aggregates will be obtained at the point of batching in accordance with ASTM D 75. Concrete will be sampled in accordance with ASTM C 172. Slump and air content will be determined in accordance with ASTM C 143/C 143M and ASTM C 231, respectively, when cylinders are molded. Compression test specimens will be made, cured, and transported in accordance with ASTM C 31/C 31M. Compression test specimens will be tested in accordance with ASTM C 39/C 39M. Samples for strength tests will be taken not less than once each shift in which concrete is produced from each class of concrete required. A minimum of three specimens will be made from each sample; two will be tested at 28 days (90 days if pozzolan is used) for acceptance, and one will be tested at 7 days for information.

1.3.1 Strength

Acceptance test results will be the average strengths of two specimens tested at 28 days (90 days if pozzolan is used). The strength of the concrete will be considered satisfactory so long as the average of three consecutive acceptance test results equal or exceed the specified compressive strength, f'_c , and no individual acceptance test result falls below f'_c by more than 3.4 MPa.

1.3.2 Construction Tolerances

A Class "C" finish shall apply to all surfaces which will not be permanently concealed after construction. A Class "D" finish shall apply to all surfaces which will be permanently concealed after construction. The surface requirements for the classes of finish required shall be as specified in ACI 347R. Honeycomb and other defects more than $\frac{1}{2}$ inch deep or more than 2 inches in diameter shall be repaired. Defects more than 2 inches in diameter shall be cut back to sound concrete, but in all cases at least 1 inch deep.

1.3.3 Concrete Mixture Proportions

Concrete mixture proportions shall be the responsibility of the Contractor. Mixture proportions shall include the dry weights of cementitious material(s); the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per cubic yard of concrete. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project. Specified compressive strength f'_c shall be a minimum of 4000 psi at 28 days (90 days if pozzolan is used). The maximum nominal size coarse aggregate shall be 1 inch, in accordance with ACI 318M. ACI 318/318R. The air content shall be between 4.5 and 7.5 percent. The slump shall be between 2 and 5 inches. The maximum water cement ratio shall be 0.45.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Cementitious Materials

Cementitious materials shall conform to the appropriate specifications listed:

2.1.1.1 Portland Cement

ASTM C 150, Type I or III, except that the tricalcium aluminate of the Type III cement shall be limited to 5 percent.

2.1.1.2 Pozzolan

Pozzolan shall conform to ASTM C 618, Class C or F, including requirements of Tables 1A and 2A.

2.1.2 Aggregates

Aggregates shall meet the quality and grading requirements of ASTM C 33 Class Designations 4M or better. However, nominal maximum size of aggregate shall not exceed any of the following: three-fourths of the minimum cover for reinforcing bars, three-fourths of the minimum clear spacing between reinforcing bars, or one-fifth of the narrowest dimension between sides of forms.

2.1.3 Admixtures

Admixtures to be used, when required or approved, shall comply with the appropriate specification listed. Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the contractor at the request of the Contracting Officer and shall be rejected if test results are not satisfactory.

2.1.3.1 Air-Entraining Admixture

Air-entraining admixture shall meet the requirements of ASTM C 260.

2.1.3.2 Accelerating Admixture

Calcium chloride shall meet the requirements of ASTM D 98. Other accelerators shall meet the requirements of ASTM C 494/C 494M, Type C or E.

2.1.3.3 Water-Reducing or Retarding Admixture

Water-reducing or retarding admixture shall meet the requirements of ASTM C 494/C 494M, Type A, B, or D. High-range water reducing admixture Type F or G may be used only when approved, approval being contingent upon particular placement requirements as described in the Contractor's Quality Control Plan.

2.1.4 Water

Water for mixing and curing shall be fresh, clean, potable, and free from injurious amounts of oil, acid, salt, or alkali, except that unpotable water may be used if it meets the requirements of COE CRD-C 400.

2.1.5 Reinforcing Steel

Reinforcing steel bar shall conform to the requirements of ASTM A 615/A 615M, Grade 60. Reinforcement shall be free from loose rust and scale, dirt, oil, or other deleterious coating that could reduce bond with the concrete. Reinforcement shall not be continuous through expansion joints. Welded steel wire fabric shall conform to the requirements of ASTM A 185. Details of reinforcement not shown shall be in accordance with ACI 318M, ACI 318/318R, Chapters 7 and 12.

2.1.6 Expansion Joint Filler Strips, Premolded

Expansion joint filler strips, premolded shall be sponge rubber conforming to ASTM D 1752, Type I.

2.1.7 Joint Sealants - Field Molded Sealants

Joint sealants - field molded sealants shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for vertical joints and Type M, Grade P, Class 25, use T for horizontal joints. Bond-breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials. The backup material shall be compressible, nonshrink, nonreactive with the sealant, and a nonabsorptive material such as extruded butyl or polychloroprene foam rubber. Immediately prior to installation of field-molded sealants, the joint shall be cleaned of all debris and further cleaned using water, chemical solvents, or other means as recommended by the sealant manufacturer or directed.

2.1.8 Formwork

The design and engineering of the formwork as well as its construction, shall be the responsibility of the Contractor.

2.1.9 Form Coatings

Forms for exposed surfaces shall be coated with a nonstaining form oil, which shall be applied shortly before concrete is placed.

2.1.10 Curing Materials

Curing materials shall conform to the following requirements.

2.1.10.1 Impervious Sheet Materials

Impervious sheet materials, ASTM C 171, type optional, except polyethylene film, if used, shall be white opaque.

2.1.10.2 Membrane-Forming Curing Compound

ASTM C 309, Type 1-D or 2, Class A B.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 General

Construction joints shall be prepared to expose coarse aggregate, and the surface shall be clean, damp, and free of laitance. Ramps and walkways, as necessary, shall be constructed to allow safe and expeditious access for concrete and workmen. Snow, ice, standing or flowing water, loose particles, debris, and foreign matter shall have been removed. Earth foundations shall be satisfactorily compacted. Spare vibrators shall be available. The entire preparation shall be accepted by the Government prior to placing.

3.1.2 Embedded Items

Reinforcement shall be secured in place; joints, anchors, and other embedded items shall have been positioned. Internal ties shall be arranged so that when the forms are removed the metal part of the tie will be not less than 2 inches from concrete surfaces permanently exposed to view or exposed to water on the finished structures. Embedded items shall be free of oil and other foreign matters such as loose coatings or rust, paint, and scale. All equipment needed to place, consolidate, protect, and cure the concrete shall be at the placement site and in good operating condition.

3.1.3 Formwork Installation

Forms shall be properly aligned, adequately supported, and mortar-tight. The form surfaces shall be smooth and free from irregularities, dents, sags, or holes when used for permanently exposed faces. All exposed joints and edges shall be chamfered, unless otherwise indicated.

3.1.4 Production of Concrete

3.1.4.1 Ready-Mixed Concrete

Ready-mixed concrete shall conform to ASTM C 94/C 94M except as otherwise specified.

3.1.4.2 Concrete Made by Volumetric Batching and Continuous Mixing

Concrete made by volumetric batching and continuous mixing shall conform to ASTM C 685.

3.1.4.3 Batching and Mixing Equipment

The contractor shall have the option of using an on-site batching and mixing facility. The facility shall provide sufficient batching and mixing equipment capacity to prevent cold joints. The method of measuring materials, batching operation, and mixer shall be submitted for review. On-site plant shall conform to the requirements of either ASTM C 94/C 94M or ASTM C 685.

3.2 CONVEYING AND PLACING CONCRETE

Conveying and placing concrete shall conform to the following requirements.

3.2.1 General

Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation without approval. The temperature of the concrete as delivered shall not exceed 32 degrees C. When the ambient temperature during placing is 5 degrees C or less, or is expected to be at any time within 6 hours after placing, the temperature of the concrete as delivered shall be between 12 and 25 degrees C.

When concrete is mixed and/or transported by a truck mixer, the concrete shall be delivered to the site of the work and discharge shall be completed within 1-1/2 hours or 45 minutes when the placing temperature is 30 degrees C or greater unless a retarding admixture is used. Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods which prevent segregation or loss of ingredients. Concrete shall be in place and consolidated within 15 minutes after discharge from the mixer. Concrete shall be deposited as close as possible to its final position in the forms and be so regulated that it may be effectively consolidated in horizontal layers 18 inches or less in thickness with a minimum of lateral movement. The placement shall be carried on at such a rate that the formation of cold joints will be prevented.

Earth (subgrade, base, or subbase courses) surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice, and standing or running water. Prior to placement of concrete, the foundation shall be well drained and shall be satisfactorily graded and uniformly compacted.

3.2.2 Consolidation

Each layer of concrete shall be consolidated by internal vibrating equipment. Internal vibration shall be systematically accomplished by inserting the vibrator through the fresh concrete in the layer below at a uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1.5 times the radius of action of the vibrator and overlay the adjacent, just-vibrated area by approximately 4 inches. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the layer below, if such a layer exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly at the rate of about 3 inches.

3.2.3 Cold-Weather Requirements

Special protection measures, approved by the Contracting Officer, shall be used if freezing temperatures are anticipated before the expiration of the specified curing period. The ambient temperature of the air where concrete is to be placed and the temperature of surfaces to receive concrete shall be not less than 40 degrees F. The temperature of the concrete when placed shall be not less than 50 degrees F nor more than 75 degrees F. Heating of the mixing water or aggregates will be required to regulate the concrete placing temperature. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salt, chemicals, or other foreign materials shall not be mixed with the concrete to prevent freezing. Upon written approval, an accelerating admixture conforming to ASTM C 494/C 494M, Type C or E may be used, providing it contains no calcium chloride. Calcium chloride shall not be used. Any concrete damaged by freezing shall be removed and replaced at the expense of the contractor.

3.2.4 Hot-Weather Requirements

When the rate of evaporation of surface moisture, as determined by use of Figure 1 of ACI 308, is expected to exceed 1 kilogram per square meter per hour, provisions for windbreaks, shading, fog spraying, or covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow.

3.3 FORM REMOVAL

Forms shall not be removed before the expiration of 24 hours after concrete placement except where otherwise specifically authorized. Supporting forms and shoring shall not be removed until the concrete has cured for at least 5 days. When conditions on the work are such as to justify the requirement, forms will be required to remain in place for longer periods.

3.4 FINISHING

3.4.1 General

No finishing or repair will be done when either the concrete or the ambient temperature is below 10 degrees C.

3.4.2 Finishing Formed Surfaces

All fins and loose materials shall be removed, and surface defects including tie holes shall be filled. All honeycomb areas and other defects shall be repaired. All unsound concrete shall be removed from areas to be repaired. Surface defects greater than ½ inch in diameter and holes left by removal of tie rods in all surfaces not to receive additional concrete shall be reamed or chipped and filled with dry-pack mortar. The prepared area shall be brush-coated with an approved epoxy resin or latex bonding compound or with a neat cement grout after dampening and filled with mortar or concrete. The cement used in mortar or concrete for repairs to all surfaces permanently exposed to view shall be a blend of portland cement and white cement so that the final color when cured will be the same as adjacent concrete.

3.4.3 Finishing Unformed Surfaces

All unformed surfaces that are not to be covered by additional concrete or backfill shall be float finished to elevations shown, unless otherwise specified. Surfaces to receive additional concrete or backfill shall be brought to the elevations shown and left as a true and regular surface. Exterior surfaces shall be sloped for drainage unless otherwise shown. Joints shall be carefully made with a jointing tool. Unformed surfaces shall be finished to a tolerance of 3/8 inch for a float finish and ¼ inch for a trowel finish as determined by a 10 foot straightedge placed on surfaces shown on the plans to be level or having a constant slope. Finishing shall not be performed while there is excess moisture or bleeding water on the surface. No water or cement shall be added to the surface during finishing.

3.4.3.1 Expansion and Contraction Joints

Expansion and contraction joints shall be made in accordance with the details shown or as otherwise specified. Provide ½ inch thick transverse expansion joints where new work abuts an

existing concrete. Expansion joints shall be provided at a maximum spacing of 25 feet on center in the wall, unless otherwise indicated.

3.5 CURING AND PROTECTION

Beginning immediately after placement and continuing for at least 10 days, except for concrete made with Type III cement, at least 3 days, all concrete shall be cured, maintained in a moist condition, and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage, and exposure to rain or flowing water. When the daily ambient low temperature is less than 0 degrees C, the temperature of the concrete shall be maintained above 5 degrees C for the first ten days after placing. Concrete shall be protected from a temperature change greater than 3 degrees C per hour and from rapid drying for the first 24 hours following the removal of temperature protection. All materials and equipment needed for adequate curing and protection shall be available and at the site of the placement prior to the start of concrete placement. Preservation of moisture for concrete surfaces not in contact with forms shall be accomplished by one of the following methods:

- a. Continuous sprinkling or ponding.
- b. Application of absorptive mats or fabrics kept continuously wet.
- c. Application of sand kept continuously wet.
- d. Application of impervious sheet material conforming to ASTM C 171.
- e. Application of membrane-forming curing compound conforming to ASTM C 309, Type 1-D, on surfaces permanently exposed to view and Type 2 on other surfaces shall be accomplished in accordance with manufacturer's instructions.

The preservation of moisture for concrete surfaces placed against wooden forms shall be accomplished by keeping the forms continuously wet for 7 days, except for concrete made with Type III cement, 3 days. If forms are removed prior to end of the required curing period, other curing methods shall be used for the balance of the curing period. During the period of protection removal, the temperature of the air in contact with the concrete shall not be allowed to drop more than 15 degrees C within a 24 hour period.

3.6 TESTS AND INSPECTIONS

3.6.1 General

The individuals who sample and test concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

3.6.2 Inspection Details and Frequency of Testing

3.6.2.1 Preparations for Placing

Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor to certify that it is ready to receive concrete.

3.6.2.2 Air Content

Air content shall be checked at least once during each shift that concrete is placed for each class of concrete required. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 231.

3.6.2.3 Slump

Slump shall be checked twice during each shift that concrete is produced for each class of concrete required. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 143/C 143M.

3.6.2.4 Consolidation and Protection

The Contractor shall ensure that the concrete is properly consolidated, finished, protected, and cured.

3.6.3 Action Required

3.6.3.1 Placing

The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators, which are in working order and have competent operators, are available. Placing shall not be continued if any pile is inadequately consolidated.

3.6.3.2 Air Content

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment shall be made to the dosage of the air-entrainment admixture.

3.6.3.3 Slump

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment should be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the water-cement ratio does not exceed that specified in the submitted concrete mixture proportion.

3.6.4 Reports

The results of all tests and inspections conducted at the project site shall be reported informally at the end of each shift and in writing weekly and shall be delivered within 3 days after the end of each weekly reporting period. See Section 01451 CONTRACTOR QUALITY CONTROL.

END OF SECTION

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